MODES TESTED

- GPRS 850
- GPRS 1900
- CDMA BC0
- CDMA BC1
- CDMA BC10
- UTMS BAND 2
- UTMS BAND 4
- UTMS BAND 5

RESULTS

See the following pages.

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8.4.1. GSM

ID:	44366	Date:	3/23/18

GPRS 850

Limit		824	849	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	824.0364	848.9651		
Extreme (50C)		824.0364	848.9651	32.1	0.038
Extreme (40C)		824.0364	848.9651	28.9	0.035
Extreme (30C)		824.0364	848.9651	22.2	0.026
Extreme (10C)		824.0364	848.9651	25.8	0.031
Extreme (0C)		824.0364	848.9651	23.8	0.028
Extreme (-10C)		824.0364	848.9651	21.1	0.025
Extreme (-20C)		824.0363	848.9651	-56.0	-0.067
Extreme (-30C)		824.0363	848.9651	-50.0	-0.060
20C	15%	824.0364	848.9651	24.2	0.029
	-15%	824.0364	848.9651	22.7	0.027
	End Point	824.0364	848.9651	23.1	0.028

ID:	44366	Date:	3/23/18

GPRS 1900

Limit		1850	1910	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	1850.0433	1909.9577		
Extreme (50C)		1850.0433	1909.9577	-71.4	-0.038
Extreme (40C)		1850.0433	1909.9577	-73.2	-0.039
Extreme (30C)		1850.0433	1909.9577	-25.5	-0.014
Extreme (10C)		1850.0433	1909.9577	-51.6	-0.027
Extreme (0C)		1850.0433	1909.9577	-65.3	-0.035
Extreme (-10C)		1850.0433	1909.9577	-50.6	-0.027
Extreme (-20C)		1850.0433	1909.9577	-51.7	-0.027
Extreme (-30C)		1850.0433	1909.9577	-41.4	-0.022
20C	15%	1850.0433	1909.9577	-41.4	-0.022
	-15%	1850.0433	1909.9577	-50.5	-0.027
	End Point	1850.0433	1909.9577	-43.6	-0.023

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8.4.2. CDMA

ID:	44366	Date:	3/23/18

CDMA 1xRTT BC0

Limit		824	849	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	824.0152	848.9856		
Extreme (50C)		824.0152	848.9856	7.8	0.009
Extreme (40C)		824.0152	848.9856	-7.8	-0.009
Extreme (30C)		824.0152	848.9856	10.4	0.012
Extreme (10C)		824.0152	848.9856	7.2	0.009
Extreme (0C)		824.0152	848.9856	10.3	0.012
Extreme (-10C)		824.0152	848.9856	5.3	0.006
Extreme (-20C)		824.0152	848.9856	6.3	0.008
Extreme (-30C)		824.0152	848.9856	5.1	0.006
20C	15%	824.0152	848.9856	9.5	0.011
	-15%	824.0152	848.9856	8.2	0.010
	End Point	824.0152	848.9856	10.7	0.013

ID:	44366	Date:	3/23/18

CDMA 1xRTT BC1

Limit		1850	1910	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	1850.5738	1909.4221		
Extreme (50C)		1850.5738	1909.4221	-40.3	-0.021
Extreme (40C)		1850.5738	1909.4221	-30.9	-0.016
Extreme (30C)		1850.5739	1909.4222	61.4	0.033
Extreme (10C)		1850.5738	1909.4221	46.1	0.025
Extreme (0C)		1850.5738	1909.4221	-25.7	-0.014
Extreme (-10C)		1850.5739	1909.4222	54.3	0.029
Extreme (-20C)		1850.5738	1909.4221	45.0	0.024
Extreme (-30C)		1850.5738	1909.4221	34.9	0.019
20C	15%	1850.5739	1909.4222	55.3	0.029
	-15%	1850.5738	1909.4221	41.4	0.022
	End Point	1850.5739	1909.4222	53.7	0.029

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ID:	44366	Date:	3/23/18

CDMA 1xRTT BC10

Limit		816	824	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)		816.5325	823.4740		
Extreme (50C)		816.5325	823.4740	22.9	0.028
Extreme (40C)		816.5325	823.4740	9.7	0.012
Extreme (30C)		816.5325	823.4740	14.7	0.018
Extreme (10C)	Normal	816.5325	823.4740	-9.5	-0.012
Extreme (0C)		816.5325	823.4740	-8.2	-0.010
Extreme (-10C)		816.5325	823.4740	7.0	0.009
Extreme (-20C)		816.5325	823.4740	-6.7	-0.008
Extreme (-30C)		816.5325	823.4740	11.6	0.014
20C	15%	816.5325	823.4740	11.5	0.014
	-15%	816.5325	823.4740	-9.8	-0.012
	End Point	816.5325	823.4740	12.4	0.015

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8.4.3. WCDMA

ID:	44366	Date:	3/23/18

UMTS REL99 BAND 2

Limit		1850	1910	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)		1850.1393	1909.8610		
Extreme (50C)		1850.1392	1909.8610	-45.7	-0.024
Extreme (40C)		1850.1392	1909.8610	-51.7	-0.028
Extreme (30C)		1850.1392	1909.8610	-48.6	-0.026
Extreme (10C)	Normal	1850.1392	1909.8610	-44.5	-0.024
Extreme (0C)		1850.1392	1909.8610	-40.2	-0.021
Extreme (-10C)		1850.1392	1909.8610	-38.1	-0.020
Extreme (-20C)		1850.1392	1909.8610	-35.9	-0.019
Extreme (-30C)		1850.1392	1909.8610	-62.8	-0.033
	15%	1850.1392	1909.8610	-46.3	-0.025
20C	-15%	1850.1392	1909.8610	-43.7	-0.023
	End Point	1850.1392	1909.8610	-44.5	-0.024

ID:	44366	Date:	3/23/18

UMTS REL99 BAND 4

Limit		1710	1755	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)		1710.1293	1754.8712		
Extreme (50C)		1710.1293	1754.8712	16.0	0.009
Extreme (40C)		1710.1293	1754.8712	16.0	0.009
Extreme (30C)		1710.1293	1754.8712	21.6	0.012
Extreme (10C)	Normal	1710.1293	1754.8712	22.8	0.013
Extreme (0C)		1710.1293	1754.8712	20.2	0.012
Extreme (-10C)		1710.1293	1754.8712	-24.9	-0.014
Extreme (-20C)		1710.1293	1754.8712	-19.6	-0.011
Extreme (-30C)		1710.1295	1754.8714	152.7	0.088
	15%	1710.1293	1754.8712	22.2	0.013
20C	-15%	1710.1293	1754.8712	21.6	0.012
	End Point	1710.1293	1754.8712	23.4	0.014

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ID:	44366	Date:	3/23/18

UMTS REL99 BAND 5

Limit		824	849	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	824.1295	848.8709		
Extreme (50C)		824.1295	848.8709	10.9	0.013
Extreme (40C)		824.1295	848.8709	-12.3	-0.015
Extreme (30C)		824.1295	848.8709	11.7	0.014
Extreme (10C)		824.1295	848.8709	-12.4	-0.015
Extreme (0C)		824.1295	848.8709	17.3	0.021
Extreme (-10C)		824.1295	848.8709	9.6	0.011
Extreme (-20C)		824.1295	848.8709	3.7	0.004
Extreme (-30C)		824.1295	848.8709	-4.5	-0.005
20C	15%	824.1295	848.8709	10.6	0.013
	-15%	824.1295	848.8709	-11.2	-0.013
	End Point	824.1295	848.8709	12.7	0.015

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8.5. PEAK-TO-AVERAGE POWER RATIO

LIMIT

In addition, the peak-to-average power ratio (PAPR) of the transmitter shall not exceed 13 dB for more than 0.1% of the time and shall use a signal corresponding to the highest PAPR during periods of continuous transmission.

RESULT

PORT A antenna was used to measure as the worst case. The results from all CCDF plots are passed with 13dB peak-to-average power ratio criteria.

ID:	50820	**Date:**	MAY 10-17, 2018

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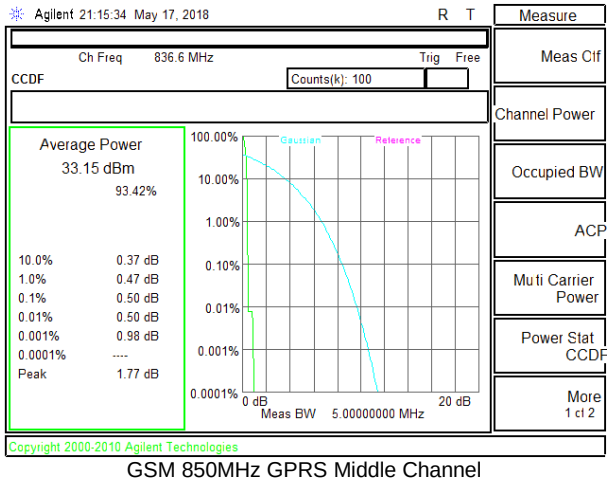
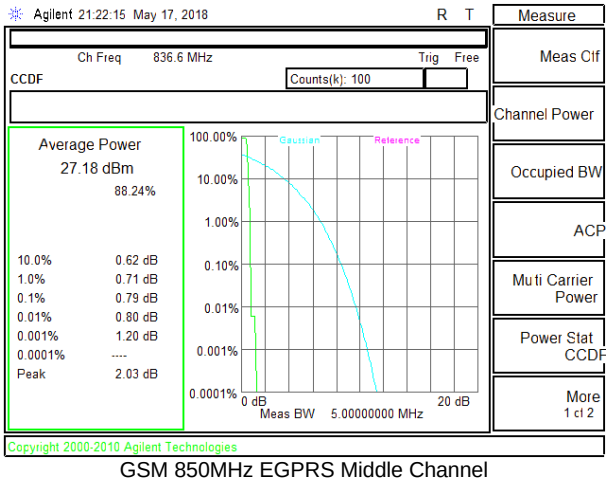
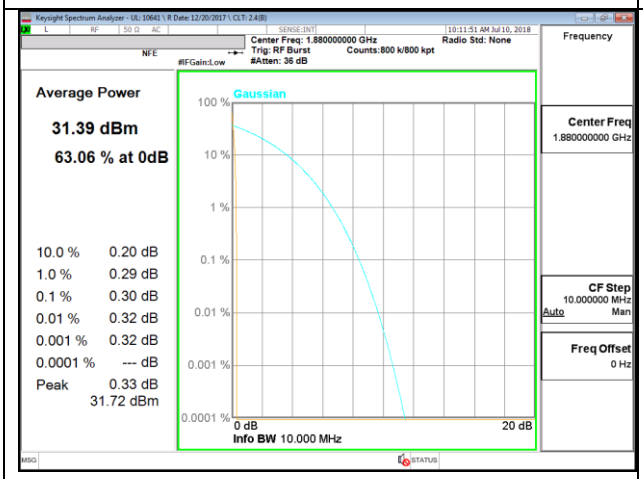
8.5.1. GSM



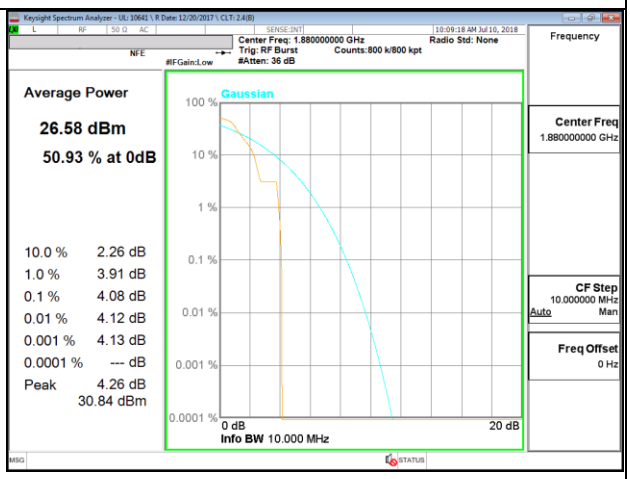
GSM 850MHz GPRS Middle Channel



GSM 850MHz EGPRS Middle Channel



GSM 1900MHz GPRS Middle Channel



GSM 1900MHz EGPRS Middle Channel

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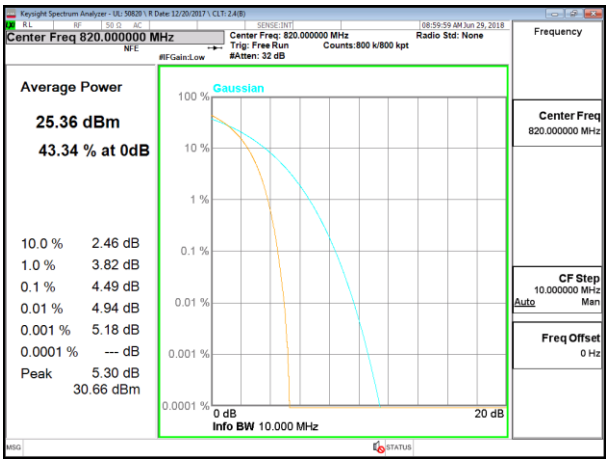
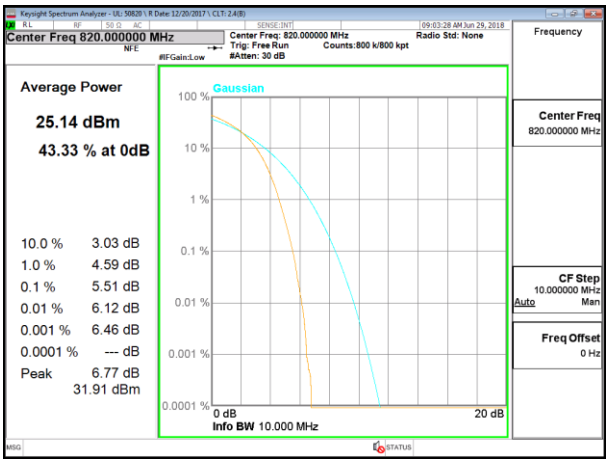
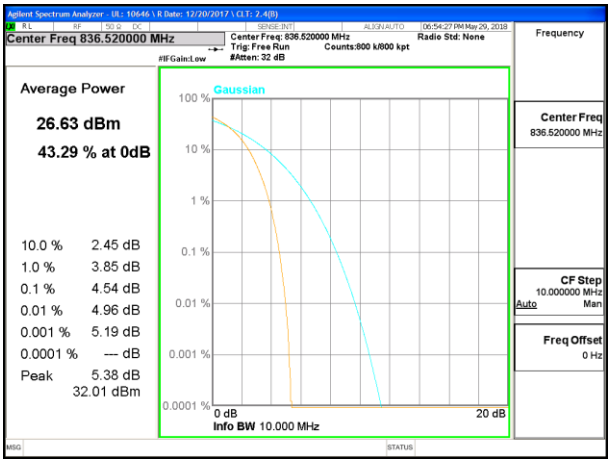
8.5.2. CDMA



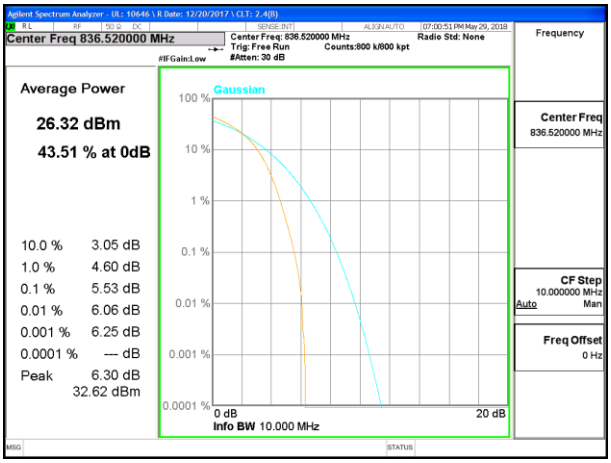
CDMA BC10 1xRTT Middle Channel



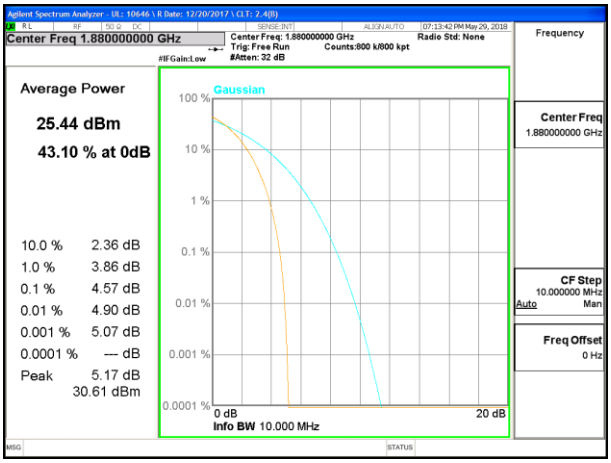
CDMA BC10 1xEV-DO Rev A Middle Channel



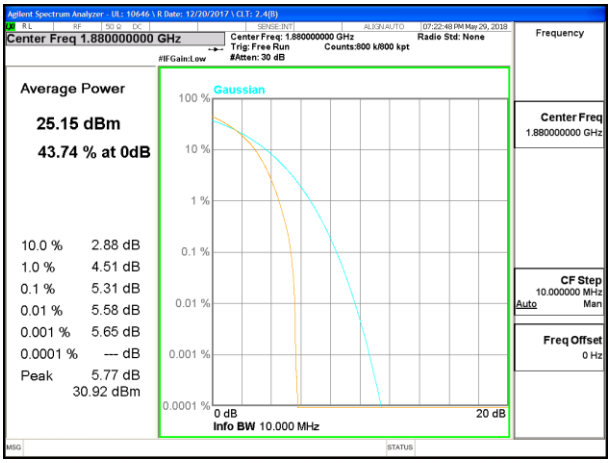
CDMA BC0 1xRTT Middle Channel



CDMA BC0 1xEV-DO Rev A Middle Channel



CDMA BC1 1xRTT Middle Channel



CDMA BC1 1xEV-DO Rev A Middle Channel

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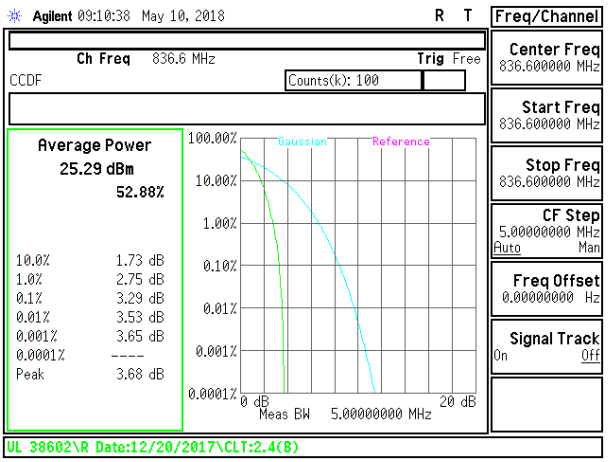
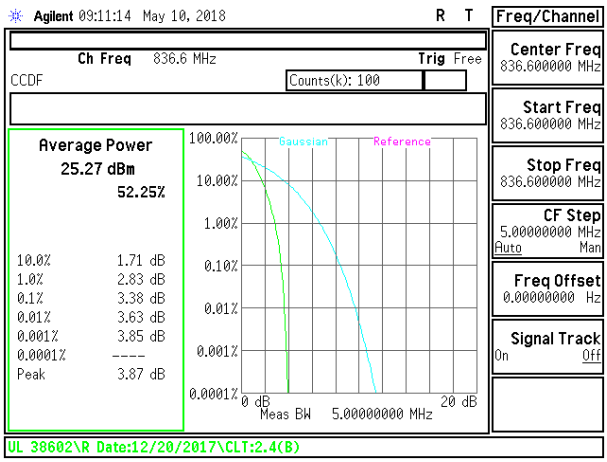
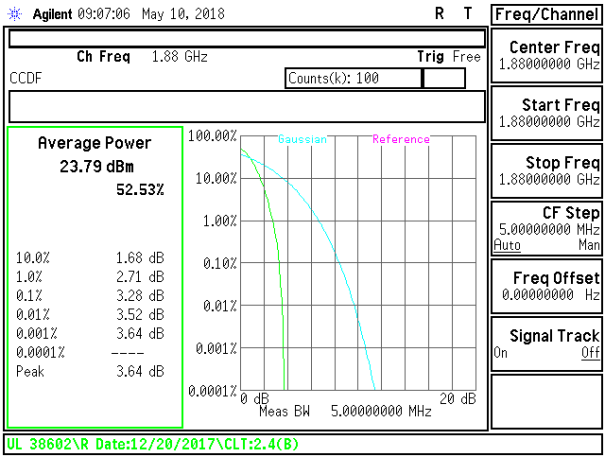
8.5.3. WCDMA



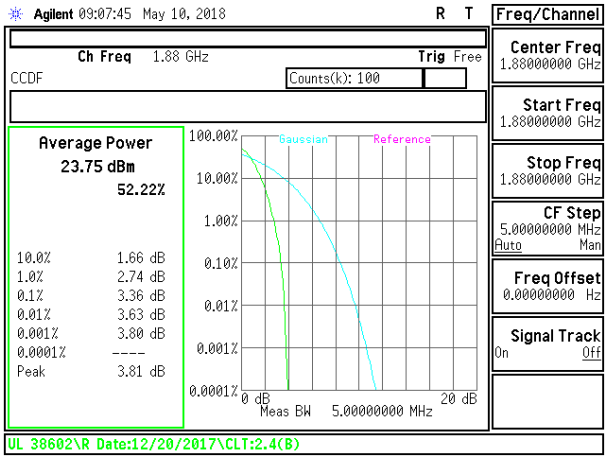
WCDMA Band 5 Rel 99 Middle Channel



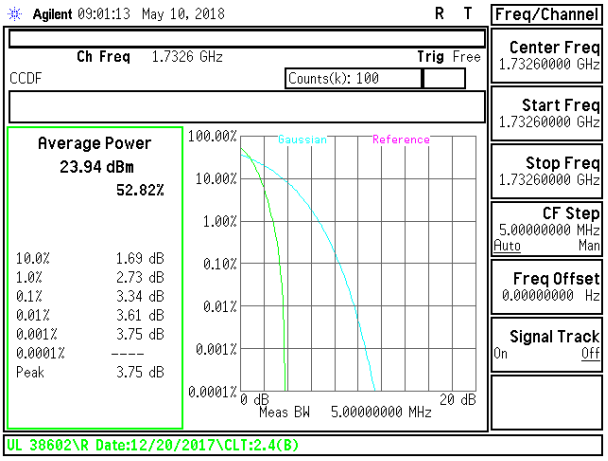
WCDMA Band 5 HSDPA Middle Channel



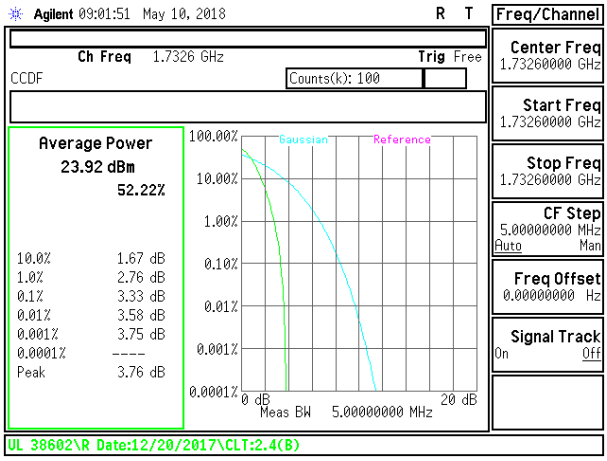
WCDMA Band 2 Rel 99 Middle Channel



WCDMA Band 2 HSDPA Middle Channel



WCDMA Band 4 Rel 99 Middle Channel



WCDMA Band 4 HSDPA Middle Channel

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9. RADIATED TEST RESULTS

RULE PART(S)

FCC: §2.1053, §22.917, §24.238, §27.53 and §90.691.
IC: RSS132§5.5; RSS133§6.5 and RSS139§6.6

LIMIT

FCC: §22.917(a), §24.238(a), §27.53 (h), §90.691
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

RSS132§5.5
Mobile and base station equipment shall comply with the limits in (i) and (ii) below.

(i) In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1% of the occupied bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10p (watts).

(ii) After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any100 kHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least43 + 10 log10 p (watts). If the measurement is performed using 1% of the occupied bandwidth, power integration over 100 kHz is required.

RSS133§6.5
Equipment shall comply with the limits in (i) and (ii) below.

(i) In the 1.0 MHz bands immediately outside and adjacent to the equipment's operating frequency block, the emission power per any 1% of the emission bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10p(watts).

(ii) After the first 1.0 MHz, the emission power in any 1 MHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10p (watts). If the measurement is performed using 1% of the emission bandwidth, power integration over 1.0 MHz is required.

RSS139§6.6

(i) In the first 1.0 MHz bands immediately outside and adjacent to the equipment's smallest operating frequency block,Footnote2 which can contain the equipment's occupied bandwidth, the emission power per any 1% of the emission bandwidth shall be attenuated below the transmitter output power P (in dBW) by at least43 + 10 log10 p (watts) dB.

(ii) After the first 1.0 MHz outside the equipment's smallest operating frequency block, which can contain the equipment's occupied bandwidth, the emission power in any 1 MHz bandwidth shall be attenuated below the transmitter output power P (in dBW) by at least 43 + 10 log10 p (watts) dB.

TEST PROCEDURE

KDB 971168 D01 Section 7

RESULTS

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9.1. FIELD STRENGTH OF SPURIOUS RADIATION (Ant 1)

9.1.1. GSM

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 04/17/18
Test Engineer: 50893
Configuration: EUT only
Mode: GPRS 850MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber: 3m Chamber F | Pre-amplifer: 3m Chamber F | Filter: Filter | Limit: EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (824.2MHz)										
1.65	-69.2	H	3.0	-28.0	33.7	1.0	-60.8	-13.0	-47.8	
2.47	-69.5	H	3.0	-25.4	34.1	1.0	-58.5	-13.0	-45.5	
3.30	-69.6	H	3.0	-21.3	34.7	1.0	-54.9	-13.0	-41.9	
1.65	-69.0	V	3.0	-25.6	33.7	1.0	-58.3	-13.0	-45.3	
2.47	-69.1	V	3.0	-24.4	34.1	1.0	-57.5	-13.0	-44.5	
3.30	-69.8	V	3.0	-21.3	34.7	1.0	-55.0	-13.0	-42.0	
Mid Channel (836.6MHz)										
1.67	-69.7	H	3.0	-28.4	33.7	1.0	-61.1	-13.0	-48.1	
2.51	-69.6	H	3.0	-25.4	34.1	1.0	-58.5	-13.0	-45.5	
3.35	-71.1	H	3.0	-22.6	34.6	1.0	-56.3	-13.0	-43.3	
1.67	-68.5	V	3.0	-25.1	33.7	1.0	-57.8	-13.0	-44.8	
2.51	-69.3	V	3.0	-24.4	34.1	1.0	-57.5	-13.0	-44.5	
3.35	-68.8	V	3.0	-20.2	34.6	1.0	-53.8	-13.0	-40.8	
High Channel (848.8MHz)										
1.70	-69.2	H	3.0	-27.7	33.7	1.0	-60.4	-13.0	-47.4	
2.55	-66.2	H	3.0	-21.8	34.2	1.0	-54.9	-13.0	-41.9	
3.40	-70.4	H	3.0	-21.7	34.8	1.0	-56.3	-13.0	-42.3	
1.70	-68.4	V	3.0	-24.9	33.7	1.0	-57.6	-13.0	-44.6	
2.55	-69.5	V	3.0	-24.4	34.2	1.0	-57.6	-13.0	-44.6	
3.40	-71.2	V	3.0	-22.3	34.8	1.0	-56.9	-13.0	-42.9	

Rev. 03.19.15

GSM 850MHz GPRS

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 04/17/18
Test Engineer: 50893
Configuration: EUT only
Mode: EGPRS 850MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber: 3m Chamber F | Pre-amplifer: 3m Chamber F | Filter: Filter | Limit: EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (824.2MHz)										
1.65	-69.2	H	3.0	-28.0	33.7	1.0	-60.7	-13.0	-47.7	
2.47	-69.6	H	3.0	-25.5	34.1	1.0	-58.6	-13.0	-45.6	
3.30	-68.9	H	3.0	-20.7	34.7	1.0	-54.3	-13.0	-41.3	
1.65	-69.2	V	3.0	-25.8	33.7	1.0	-58.5	-13.0	-45.5	
2.47	-69.6	V	3.0	-24.9	34.1	1.0	-58.0	-13.0	-45.0	
3.30	-68.9	V	3.0	-20.4	34.7	1.0	-54.0	-13.0	-41.0	
Mid Channel (836.6MHz)										
1.67	-69.6	H	3.0	-28.3	33.7	1.0	-61.0	-13.0	-48.0	
2.51	-70.4	H	3.0	-26.2	34.1	1.0	-59.3	-13.0	-46.3	
3.35	-71.0	H	3.0	-22.6	34.6	1.0	-56.2	-13.0	-43.2	
1.67	-67.9	V	3.0	-24.6	33.7	1.0	-57.2	-13.0	-44.2	
2.51	-70.9	V	3.0	-26.1	34.1	1.0	-59.2	-13.0	-46.2	
3.35	-70.5	V	3.0	-21.8	34.6	1.0	-55.5	-13.0	-42.5	
High Channel (848.8MHz)										
1.70	-69.1	H	3.0	-27.6	33.7	1.0	-60.3	-13.0	-47.3	
2.55	-70.3	H	3.0	-25.9	34.2	1.0	-59.0	-13.0	-46.0	
3.40	-69.1	H	3.0	-20.5	34.8	1.0	-54.1	-13.0	-41.1	
1.70	-68.3	V	3.0	-24.9	33.7	1.0	-57.6	-13.0	-44.6	
2.55	-69.5	V	3.0	-24.4	34.2	1.0	-57.6	-13.0	-44.6	
3.40	-69.8	V	3.0	-20.9	34.8	1.0	-54.5	-13.0	-41.5	

Rev. 03.19.15

GSM 850MHz EGPRS

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 04/17/18
Test Engineer: 50893
Configuration: EUT only
Mode: GPRS 1900MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber: 3m Chamber F | Pre-amplifer: 3m Chamber F | Filter: Filter | Limit: EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1850.2MHz)										
3.70	-71.0	H	3.0	-21.2	34.4	1.0	-54.7	-13.0	-41.7	
5.55	-71.0	H	3.0	-17.5	34.1	1.0	-50.7	-13.0	-37.7	
7.40	-72.4	H	3.0	-16.1	33.6	1.0	-48.7	-13.0	-35.7	
3.70	-72.0	V	3.0	-22.1	34.4	1.0	-55.6	-13.0	-42.6	
5.55	-70.1	V	3.0	-16.5	34.1	1.0	-49.6	-13.0	-36.6	
7.40	-72.9	V	3.0	-16.8	33.6	1.0	-49.4	-13.0	-36.4	
Mid Channel (1880.0)										
3.76	-70.7	H	3.0	-20.7	34.4	1.0	-54.1	-13.0	-41.1	
5.64	-71.7	H	3.0	-18.1	34.1	1.0	-51.2	-13.0	-38.2	
7.52	-73.7	H	3.0	-17.3	33.5	1.0	-49.8	-13.0	-36.8	
3.76	-71.1	V	3.0	-21.0	34.4	1.0	-54.5	-13.0	-41.5	
5.64	-71.3	V	3.0	-17.6	34.1	1.0	-50.7	-13.0	-37.7	
7.52	-73.6	V	3.0	-17.3	33.5	1.0	-49.8	-13.0	-36.8	
High Channel (1909.8MHz)										
3.82	-71.8	H	3.0	-21.6	34.4	1.0	-54.9	-13.0	-41.9	
5.73	-70.5	H	3.0	-16.8	34.1	1.0	-49.9	-13.0	-36.9	
7.54	-72.7	H	3.0	-16.2	33.5	1.0	-48.7	-13.0	-35.7	
3.82	-70.1	V	3.0	-19.8	34.4	1.0	-53.2	-13.0	-40.2	
5.73	-71.0	V	3.0	-17.2	34.1	1.0	-50.3	-13.0	-37.3	
7.54	-73.5	V	3.0	-17.2	33.5	1.0	-49.7	-13.0	-36.7	

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GSM 1900MHz GPRS

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 04/17/18
Test Engineer: 50893
Configuration: EUT only
Mode: EGPRS 1900MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber: 3m Chamber F | Pre-amplifer: 3m Chamber F | Filter: Filter | Limit: EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1850.2MHz)										
3.70	-71.0	H	3.0	-21.2	34.4	1.0	-54.6	-13.0	-41.6	
5.55	-69.9	H	3.0	-16.4	34.1	1.0	-49.6	-13.0	-36.6	
7.40	-74.8	H	3.0	-18.5	33.6	1.0	-51.1	-13.0	-38.1	
3.70	-71.1	V	3.0	-21.3	34.4	1.0	-54.7	-13.0	-41.7	
5.55	-69.3	V	3.0	-15.7	34.1	1.0	-48.8	-13.0	-35.8	
7.40	-73.3	V	3.0	-17.2	33.6	1.0	-49.8	-13.0	-36.8	
Mid Channel (1880.0)										
3.76	-72.0	H	3.0	-22.1	34.4	1.0	-55.5	-13.0	-42.5	
5.64	-70.4	H	3.0	-16.8	34.1	1.0	-49.9	-13.0	-36.9	
7.52	-74.0	H	3.0	-17.6	33.5	1.0	-50.1	-13.0	-37.1	
3.76	-71.1	V	3.0	-21.0	34.4	1.0	-54.4	-13.0	-41.4	
5.64	-71.8	V	3.0	-18.1	34.1	1.0	-51.2	-13.0	-38.2	
7.52	-73.9	V	3.0	-17.6	33.5	1.0	-50.1	-13.0	-37.1	
High Channel (1909.8MHz)										
3.82	-72.0	H	3.0	-21.8	34.4	1.0	-55.2	-13.0	-42.2	
5.73	-69.6	H	3.0	-15.8	34.1	1.0	-48.9	-13.0	-35.9	
7.54	-71.6	H	3.0	-15.1	33.5	1.0	-47.6	-13.0	-34.6	
3.82	-71.1	V	3.0	-20.8	34.4	1.0	-54.2	-13.0	-41.2	
5.73	-71.2	V	3.0	-17.4	34.1	1.0	-50.5	-13.0	-37.5	
7.54	-73.5	V	3.0	-17.2	33.5	1.0	-49.7	-13.0	-36.7	

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GSM 1900MHz EGPRS

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9.1.2. CDMA

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 05/04/18
Test Engineer: 19406
Configuration: EUT only
Mode: 1xRTT 800MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber: 3m Chamber E | Pre-amplifer: 3m Chamber E | Filter: Filter | Limit: EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (817.25MHz)										
1.63	-59.0	H	3.0	-16.6	37.8	1.0	-53.4	-13.0	-40.4	
2.45	-65.0	H	3.0	-20.1	38.4	1.0	-57.5	-13.0	-44.5	
3.27	-65.0	H	3.0	-16.1	38.5	1.0	-53.6	-13.0	-40.6	
1.63	-58.0	V	3.0	-15.9	37.8	1.0	-52.8	-13.0	-39.8	
2.45	-64.6	V	3.0	-19.5	38.4	1.0	-56.9	-13.0	-43.9	
3.27	-65.4	V	3.0	-16.8	38.5	1.0	-54.2	-13.0	-41.2	
Mid Channel (820MHz)										
1.64	-58.4	H	3.0	-16.0	37.8	1.0	-52.8	-13.0	-39.8	
2.46	-63.4	H	3.0	-18.4	38.4	1.0	-55.9	-13.0	-42.9	
3.28	-65.4	H	3.0	-16.5	38.5	1.0	-54.0	-13.0	-41.0	
1.64	-53.9	V	3.0	-11.8	37.8	1.0	-48.7	-13.0	-35.7	
2.46	-65.1	V	3.0	-20.0	38.4	1.0	-57.4	-13.0	-44.4	
3.28	-64.4	V	3.0	-15.7	38.5	1.0	-53.2	-13.0	-40.2	
High Channel (822.75MHz)										
1.65	-62.2	H	3.0	-19.7	37.8	1.0	-56.5	-13.0	-43.5	
2.47	-65.5	H	3.0	-20.5	38.5	1.0	-57.9	-13.0	-44.9	
3.29	-65.5	H	3.0	-16.6	38.5	1.0	-54.0	-13.0	-41.0	
1.65	-57.8	V	3.0	-15.6	37.8	1.0	-52.5	-13.0	-39.5	
2.47	-65.3	V	3.0	-20.2	38.5	1.0	-57.6	-13.0	-44.6	
3.29	-65.3	V	3.0	-16.7	38.5	1.0	-54.2	-13.0	-41.2	

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CDMA BC10 1xRTT

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 05/04/18
Test Engineer: 19406
Configuration: EUT only
Mode: Rev 0/A, 800MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber: 3m Chamber E | Pre-amplifer: 3m Chamber E | Filter: Filter | Limit: EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (817.25MHz)										
1.63	-57.7	H	3.0	-15.3	37.8	1.0	-52.1	-13.0	-39.1	
2.45	-63.6	H	3.0	-18.8	38.4	1.0	-56.1	-13.0	-43.1	
3.27	-65.9	H	3.0	-17.0	38.5	1.0	-54.5	-13.0	-41.5	
1.63	-54.9	V	3.0	-12.8	37.8	1.0	-49.7	-13.0	-36.7	
2.45	-61.3	V	3.0	-16.2	38.4	1.0	-53.6	-13.0	-40.6	
3.27	-65.1	V	3.0	-16.5	38.5	1.0	-53.9	-13.0	-40.9	
Mid Channel (820MHz)										
1.64	-57.5	H	3.0	-15.0	37.8	1.0	-51.9	-13.0	-38.9	
2.46	-63.5	H	3.0	-18.6	38.4	1.0	-56.0	-13.0	-43.0	
3.28	-64.6	H	3.0	-15.7	38.5	1.0	-53.1	-13.0	-40.1	
1.64	-53.2	V	3.0	-11.1	37.8	1.0	-47.9	-13.0	-34.9	
2.46	-60.5	V	3.0	-15.4	38.4	1.0	-52.8	-13.0	-39.8	
3.28	-63.8	V	3.0	-15.2	38.5	1.0	-52.7	-13.0	-39.7	
High Channel (822.75MHz)										
1.65	-62.3	H	3.0	-19.8	37.8	1.0	-56.7	-13.0	-43.7	
2.47	-65.8	H	3.0	-20.8	38.5	1.0	-58.3	-13.0	-45.3	
3.29	-65.3	H	3.0	-16.3	38.5	1.0	-53.8	-13.0	-40.8	
1.65	-54.5	V	3.0	-12.4	37.8	1.0	-49.2	-13.0	-36.2	
2.47	-63.5	V	3.0	-18.3	38.5	1.0	-55.8	-13.0	-42.8	
3.29	-66.3	V	3.0	-17.7	38.5	1.0	-55.1	-13.0	-42.1	

Rev. 03.19.15

CDMA BC10 1xEV-DO Rev A

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 05/04/18
Test Engineer: 19406
Configuration: EUT Only
Mode: 1xRTT 850MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber: 3m Chamber E | Pre-amplifer: 3m Chamber E | Filter: Filter | Limit: EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (824.7MHz)										
1.65	-62.8	H	3.0	-20.3	37.8	1.0	-57.2	-13.0	-44.2	
2.47	-62.9	H	3.0	-17.9	38.5	1.0	-55.3	-13.0	-42.3	
3.30	-65.1	H	3.0	-16.2	38.5	1.0	-53.7	-13.0	-40.7	
1.65	-55.4	V	3.0	-13.2	37.8	1.0	-50.1	-13.0	-37.1	
2.47	-62.4	V	3.0	-17.2	38.5	1.0	-54.7	-13.0	-41.7	
3.30	-65.5	V	3.0	-16.8	38.5	1.0	-54.3	-13.0	-41.3	
Mid Channel (836.52MHz)										
1.67	-63.2	H	3.0	-20.7	37.8	1.0	-57.6	-13.0	-44.6	
2.51	-65.5	H	3.0	-20.3	38.6	1.0	-57.9	-13.0	-44.9	
3.35	-65.7	H	3.0	-16.6	38.5	1.0	-54.1	-13.0	-41.1	
1.67	-54.5	V	3.0	-12.3	37.8	1.0	-49.1	-13.0	-36.1	
2.51	-64.6	V	3.0	-19.3	38.6	1.0	-56.8	-13.0	-43.8	
3.35	-64.7	V	3.0	-15.9	38.5	1.0	-53.4	-13.0	-40.4	
High Channel (848.31MHz)										
1.70	-63.7	H	3.0	-21.1	37.9	1.0	-58.0	-13.0	-45.0	
2.54	-65.6	H	3.0	-20.2	38.6	1.0	-57.7	-13.0	-44.7	
3.39	-65.5	H	3.0	-16.3	38.5	1.0	-53.9	-13.0	-40.9	
1.70	-60.4	V	3.0	-18.0	37.9	1.0	-54.9	-13.0	-41.9	
2.54	-65.7	V	3.0	-20.2	38.6	1.0	-57.8	-13.0	-44.8	
3.39	-65.7	V	3.0	-16.8	38.5	1.0	-54.3	-13.0	-41.3	

Rev. 03.19.15

CDMA BC0 1xRTT

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 05/04/18
Test Engineer: 19406
Configuration: EUT only
Mode: Rev 0/A 850MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber: 3m Chamber E | Pre-amplifer: 3m Chamber E | Filter: Filter | Limit: EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (824.7MHz)										
1.65	-63.3	H	3.0	-20.8	37.8	1.0	-57.7	-13.0	-44.7	
2.47	-62.7	H	3.0	-17.7	38.5	1.0	-55.2	-13.0	-42.2	
3.30	-64.7	H	3.0	-15.8	38.5	1.0	-53.2	-13.0	-40.2	
1.65	-53.9	V	3.0	-11.8	37.8	1.0	-48.6	-13.0	-35.6	
2.47	-60.9	V	3.0	-15.7	38.5	1.0	-53.2	-13.0	-40.2	
3.30	-64.9	V	3.0	-16.2	38.5	1.0	-53.7	-13.0	-40.7	
Mid Channel (836.52MHz)										
1.67	-61.8	H	3.0	-19.3	37.8	1.0	-56.2	-13.0	-43.2	
2.51	-63.9	H	3.0	-18.6	38.6	1.0	-56.2	-13.0	-43.2	
3.35	-66.1	H	3.0	-17.0	38.5	1.0	-54.5	-13.0	-41.5	
1.67	-52.6	V	3.0	-10.4	37.8	1.0	-47.2	-13.0	-34.2	
2.51	-60.5	V	3.0	-15.1	38.6	1.0	-52.6	-13.0	-39.6	
3.35	-65.1	V	3.0	-16.2	38.5	1.0	-53.7	-13.0	-40.7	
High Channel (848.31MHz)										
1.70	-62.4	H	3.0	-19.8	37.9	1.0	-56.7	-13.0	-43.7	
2.54	-65.5	H	3.0	-20.1	38.6	1.0	-57.7	-13.0	-44.7	
3.39	-65.4	H	3.0	-16.2	38.5	1.0	-53.7	-13.0	-40.7	
1.70	-54.1	V	3.0	-11.7	37.9	1.0	-48.5	-13.0	-35.5	
2.54	-64.8	V	3.0	-19.2	38.6	1.0	-56.8	-13.0	-43.8	
3.39	-65.3	V	3.0	-16.4	38.5	1.0	-53.9	-13.0	-40.9	

Rev. 03.19.15

CDMA BC0 1xEV-DO Rev A

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 05/04/18
Test Engineer: 19406
Configuration: EUT only
Mode: 1xRTT 1900MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber: 3m Chamber E | Pre-amplifer: 3m Chamber E | Filter: Filter | Limit: EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1851.25MHz)										
3.70	-62.5	H	3.0	-12.5	38.6	1.0	-50.1	-13.0	-37.1	
5.55	-63.8	H	3.0	-9.8	38.6	1.0	-47.4	-13.0	-34.4	
7.41	-64.4	H	3.0	-6.7	37.8	1.0	-43.5	-13.0	-30.5	
3.70	-61.8	V	3.0	-11.9	38.6	1.0	-49.5	-13.0	-36.5	
5.55	-64.8	V	3.0	-11.1	38.6	1.0	-48.7	-13.0	-35.7	
7.41	-66.2	V	3.0	-8.7	37.8	1.0	-45.5	-13.0	-32.5	
Mid Channel (1880MHz)										
3.76	-61.9	H	3.0	-11.8	38.6	1.0	-49.5	-13.0	-36.5	
5.64	-65.2	H	3.0	-11.0	38.5	1.0	-48.5	-13.0	-35.5	
7.52	-68.1	H	3.0	-10.3	37.7	1.0	-47.1	-13.0	-34.1	
3.76	-61.9	V	3.0	-11.9	38.6	1.0	-49.5	-13.0	-36.5	
5.64	-65.2	V	3.0	-11.3	38.5	1.0	-48.8	-13.0	-35.8	
7.52	-68.2	V	3.0	-10.6	37.7	1.0	-47.3	-13.0	-34.3	
High Channel (1908.75MHz)										
3.82	-61.9	H	3.0	-11.6	38.7	1.0	-49.2	-13.0	-36.2	
5.73	-63.9	H	3.0	-9.4	38.5	1.0	-46.9	-13.0	-33.9	
7.64	-65.4	H	3.0	-7.5	37.7	1.0	-44.1	-13.0	-31.1	
3.82	-61.3	V	3.0	-11.0	38.7	1.0	-48.7	-13.0	-35.7	
5.73	-63.3	V	3.0	-9.2	38.5	1.0	-46.7	-13.0	-33.7	
7.64	-65.9	V	3.0	-8.1	37.7	1.0	-44.8	-13.0	-31.8	

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CDMA BC1 1xRTT

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 05/04/18
Test Engineer: 19406
Configuration: EUT only
Mode: Rev 0/A 1900MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber: 3m Chamber E | Pre-amplifer: 3m Chamber E | Filter: Filter | Limit: EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1851.25MHz)										
3.70	-61.9	H	3.0	-11.9	38.6	1.0	-49.6	-13.0	-36.6	
5.55	-62.4	H	3.0	-8.4	38.6	1.0	-45.9	-13.0	-32.9	
7.41	-65.7	H	3.0	-8.0	37.8	1.0	-44.8	-13.0	-31.8	
3.70	-60.0	V	3.0	-10.1	38.6	1.0	-47.7	-13.0	-34.7	
5.55	-64.5	V	3.0	-10.7	38.6	1.0	-48.3	-13.0	-35.3	
7.41	-67.3	V	3.0	-9.8	37.8	1.0	-46.7	-13.0	-33.7	
Mid Channel (1880MHz)										
3.76	-62.5	H	3.0	-12.4	38.6	1.0	-50.0	-13.0	-37.0	
5.64	-62.3	H	3.0	-8.0	38.5	1.0	-45.6	-13.0	-32.6	
7.52	-66.7	H	3.0	-8.9	37.7	1.0	-45.6	-13.0	-32.6	
3.76	-61.9	V	3.0	-11.8	38.6	1.0	-49.5	-13.0	-36.5	
5.64	-64.0	V	3.0	-10.1	38.5	1.0	-47.6	-13.0	-34.6	
7.52	-66.0	V	3.0	-8.4	37.7	1.0	-45.2	-13.0	-32.2	
High Channel (1908.75MHz)										
3.82	-62.3	H	3.0	-12.1	38.7	1.0	-49.7	-13.0	-36.7	
5.73	-64.5	H	3.0	-10.1	38.5	1.0	-47.6	-13.0	-34.6	
7.64	-67.3	H	3.0	-9.4	37.7	1.0	-46.0	-13.0	-33.0	
3.82	-61.2	V	3.0	-11.0	38.7	1.0	-48.6	-13.0	-35.6	
5.73	-62.6	V	3.0	-8.4	38.5	1.0	-45.9	-13.0	-32.9	
7.64	-66.2	V	3.0	-8.4	37.7	1.0	-45.1	-13.0	-32.1	

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CDMA BC1 1xEV-DO Rev A

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9.1.3. WCDMA

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 05/01/18
Test Engineer: 44410
Configuration: EUT Only
Mode: REL 99, 850MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber E	3m Chamber E	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (826.4MHz)										
1.65	-65.5	H	3.0	-23.0	37.8	1.0	-59.9	-13.0	-46.9	
2.48	-64.4	H	3.0	-19.4	38.5	1.0	-56.9	-13.0	-43.9	
3.31	-63.9	H	3.0	-14.9	38.5	1.0	-52.4	-13.0	-39.4	
1.65	-65.7	V	3.0	-23.5	37.8	1.0	-60.4	-13.0	-47.4	
2.48	-66.0	V	3.0	-20.7	38.5	1.0	-58.2	-13.0	-45.2	
3.31	-64.8	V	3.0	-16.0	38.5	1.0	-53.5	-13.0	-40.5	
Mid Channel (836.6MHz)										
1.67	-67.4	H	3.0	-24.9	37.8	1.0	-61.7	-13.0	-48.7	
2.51	-65.5	H	3.0	-20.3	38.6	1.0	-57.9	-13.0	-44.9	
3.35	-66.0	H	3.0	-17.0	38.5	1.0	-54.5	-13.0	-41.5	
1.67	-66.8	V	3.0	-24.5	37.8	1.0	-61.3	-13.0	-48.3	
2.51	-65.6	V	3.0	-20.2	38.6	1.0	-57.8	-13.0	-44.8	
3.35	-64.9	V	3.0	-16.1	38.5	1.0	-53.5	-13.0	-40.5	
High Channel (846.6MHz)										
1.69	-66.0	H	3.0	-23.5	37.9	1.0	-60.3	-13.0	-47.3	
2.54	-64.6	H	3.0	-19.2	38.6	1.0	-56.8	-13.0	-43.8	
3.39	-64.9	H	3.0	-15.8	38.5	1.0	-53.3	-13.0	-40.3	
1.69	-66.2	V	3.0	-23.9	37.9	1.0	-60.7	-13.0	-47.7	
2.54	-65.0	V	3.0	-19.5	38.6	1.0	-57.1	-13.0	-44.1	
3.39	-66.0	V	3.0	-17.0	38.5	1.0	-54.5	-13.0	-41.5	

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WCDMA Band 5 Rel 99

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 05/01/18
Test Engineer: 44410
Configuration: EUT Only
Mode: HSDPA 850MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber E	3m Chamber E	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (826.4MHz)										
1.65	-66.8	H	3.0	-24.3	37.8	1.0	-61.2	-13.0	-48.2	
2.48	-65.7	H	3.0	-20.6	38.5	1.0	-58.1	-13.0	-45.1	
3.31	-65.4	H	3.0	-16.4	38.5	1.0	-53.9	-13.0	-40.9	
1.65	-67.3	V	3.0	-25.1	37.8	1.0	-62.0	-13.0	-49.0	
2.48	-66.7	V	3.0	-21.5	38.5	1.0	-59.0	-13.0	-46.0	
3.31	-65.8	V	3.0	-17.1	38.5	1.0	-54.6	-13.0	-41.6	
Mid Channel (836.6MHz)										
1.67	-65.7	H	3.0	-23.2	37.8	1.0	-60.0	-13.0	-47.0	
2.51	-64.6	H	3.0	-19.4	38.6	1.0	-57.0	-13.0	-44.0	
3.35	-65.4	H	3.0	-16.3	38.5	1.0	-53.8	-13.0	-40.8	
1.67	-66.9	V	3.0	-24.6	37.8	1.0	-61.5	-13.0	-48.5	
2.51	-65.4	V	3.0	-20.0	38.6	1.0	-57.5	-13.0	-44.5	
3.35	-66.6	V	3.0	-17.7	38.5	1.0	-55.2	-13.0	-42.2	
High Channel (846.6MHz)										
1.69	-66.4	H	3.0	-23.9	37.9	1.0	-60.7	-13.0	-47.7	
2.54	-65.3	H	3.0	-19.9	38.6	1.0	-57.4	-13.0	-44.4	
3.39	-65.1	H	3.0	-15.9	38.5	1.0	-53.4	-13.0	-40.4	
1.69	-66.5	V	3.0	-24.1	37.9	1.0	-61.0	-13.0	-48.0	
2.54	-64.8	V	3.0	-19.3	38.6	1.0	-56.8	-13.0	-43.8	
3.39	-65.7	V	3.0	-16.7	38.5	1.0	-54.2	-13.0	-41.2	

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WCDMA Band 5 HSDPA

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 05/01/18
Test Engineer: 44410
Configuration: EUT Only
Mode: REL 99, 1900MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber E	3m Chamber E	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1852.4MHz)										
3.70	-62.2	H	3.0	-12.2	38.6	1.0	-49.8	-13.0	-36.8	
5.56	-65.5	H	3.0	-11.5	38.6	1.0	-49.0	-13.0	-36.0	
7.41	-67.1	H	3.0	-9.4	37.8	1.0	-46.3	-13.0	-33.3	
3.70	-62.5	V	3.0	-12.6	38.6	1.0	-50.2	-13.0	-37.2	
5.55	-64.2	V	3.0	-10.4	38.6	1.0	-48.0	-13.0	-35.0	
7.42	-66.5	V	3.0	-9.0	37.8	1.0	-45.8	-13.0	-32.8	
Mid Channel (1880MHz)										
3.76	-61.1	H	3.0	-11.0	38.6	1.0	-48.7	-13.0	-35.7	
5.64	-63.2	H	3.0	-8.9	38.5	1.0	-46.5	-13.0	-33.5	
7.52	-65.7	H	3.0	-7.8	37.7	1.0	-44.6	-13.0	-31.6	
3.76	-62.9	V	3.0	-12.9	38.6	1.0	-50.5	-13.0	-37.5	
5.64	-63.9	V	3.0	-10.8	38.5	1.0	-47.5	-13.0	-34.5	
7.52	-66.7	V	3.0	-9.1	37.7	1.0	-45.9	-13.0	-32.9	
High Channel (1907.6MHz)										
3.82	-61.8	H	3.0	-11.5	38.7	1.0	-49.2	-13.0	-36.2	
5.72	-65.0	H	3.0	-10.6	38.5	1.0	-48.1	-13.0	-35.1	
7.66	-66.2	H	3.0	-8.2	37.7	1.0	-44.9	-13.0	-31.9	
3.82	-60.6	V	3.0	-10.4	38.7	1.0	-48.0	-13.0	-35.0	
5.72	-63.8	V	3.0	-9.7	38.5	1.0	-47.2	-13.0	-34.2	
7.63	-66.7	V	3.0	-9.0	37.7	1.0	-45.7	-13.0	-32.7	

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WCDMA Band 2 Rel 99

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 05/01/18
Test Engineer: 44410
Configuration: EUT Only
Mode: HSDPA 1900MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber E	3m Chamber E	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1852.4MHz)										
3.70	-62.7	H	3.0	-12.7	38.6	1.0	-50.3	-13.0	-37.3	
5.56	-64.6	H	3.0	-10.6	38.6	1.0	-48.1	-13.0	-35.1	
7.41	-66.7	H	3.0	-9.0	37.8	1.0	-45.9	-13.0	-32.9	
3.70	-61.5	V	3.0	-11.7	38.6	1.0	-49.3	-13.0	-36.3	
5.56	-62.2	V	3.0	-8.5	38.6	1.0	-46.0	-13.0	-33.0	
7.41	-66.8	V	3.0	-9.4	37.8	1.0	-46.2	-13.0	-33.2	
Mid Channel (1880MHz)										
3.76	-62.1	H	3.0	-12.0	38.6	1.0	-49.6	-13.0	-36.6	
5.64	-63.8	H	3.0	-9.6	38.5	1.0	-47.1	-13.0	-34.1	
7.52	-66.9	H	3.0	-9.1	37.7	1.0	-45.8	-13.0	-32.8	
3.76	-63.1	V	3.0	-13.0	38.6	1.0	-50.7	-13.0	-37.7	
5.64	-62.3	V	3.0	-8.4	38.5	1.0	-45.9	-13.0	-32.9	
7.52	-66.7	V	3.0	-9.1	37.7	1.0	-45.9	-13.0	-32.9	
High Channel (1907.6MHz)										
3.82	-61.8	H	3.0	-11.5	38.7	1.0	-49.2	-13.0	-36.2	
5.72	-64.3	H	3.0	-9.9	38.5	1.0	-47.4	-13.0	-34.4	
7.63	-66.5	H	3.0	-8.6	37.7	1.0	-45.2	-13.0	-32.2	
3.82	-62.3	V	3.0	-12.0	38.7	1.0	-49.7	-13.0	-36.7	
5.72	-64.1	V	3.0	-10.0	38.5	1.0	-47.5	-13.0	-34.5	
7.63	-66.9	V	3.0	-9.1	37.7	1.0	-45.8	-13.0	-32.8	

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WCDMA Band 2 HSDPA

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 05/01/18
Test Engineer: 44410
Configuration: EUT Only
Mode: REL 99, 1700MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber E	3m Chamber E	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1712.4MHz)										
3.42	-66.4	H	3.0	-17.1	38.5	1.0	-54.7	-13.0	-41.7	
5.14	-64.5	H	3.0	-11.4	38.7	1.0	-49.1	-13.0	-36.1	
6.85	-65.2	H	3.0	-8.3	38.1	1.0	-45.4	-13.0	-32.4	
3.42	-66.5	V	3.0	-17.5	38.5	1.0	-55.0	-13.0	-42.0	
5.14	-63.7	V	3.0	-10.9	38.7	1.0	-48.6	-13.0	-35.6	
6.85	-65.6	V	3.0	-9.0	38.1	1.0	-46.1	-13.0	-33.1	
Mid Channel (1732.6MHz)										
3.47	-67.3	H	3.0	-17.9	38.5	1.0	-55.4	-13.0	-42.4	
5.20	-62.8	H	3.0	-9.5	38.7	1.0	-47.2	-13.0	-34.2	
6.93	-64.9	H	3.0	-7.8	38.1	1.0	-44.9	-13.0	-31.9	
3.47	-66.3	V	3.0	-17.1	38.5	1.0	-54.7	-13.0	-41.7	
5.20	-64.4	V	3.0	-11.4	38.7	1.0	-49.1	-13.0	-36.1	
6.93	-65.4	V	3.0	-8.6	38.1	1.0	-45.7	-13.0	-32.7	
High Channel (1752.6MHz)										
3.51	-65.2	H	3.0	-15.7	38.5	1.0	-53.3	-13.0	-40.3	
5.26	-65.4	H	3.0	-12.0	38.7	1.0	-49.6	-13.0	-36.6	
7.01	-65.1	H	3.0	-7.9	38.1	1.0	-44.9	-13.0	-31.9	
3.51	-64.7	V	3.0	-15.4	38.5	1.0	-52.9	-13.0	-39.9	
5.26	-65.2	V	3.0	-12.2	38.7	1.0	-49.8	-13.0	-36.8	
7.01	-65.5	V	3.0	-8.5	38.1	1.0	-45.6	-13.0	-32.6	

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WCDMA Band 4 Rel 99

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 05/01/18
Test Engineer: 44410
Configuration: EUT Only
Mode: HSDPA 1700MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber E	3m Chamber E	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1712.4MHz)										
3.42	-66.7	H	3.0	-17.4	38.5	1.0	-54.9	-13.0	-41.9	
5.14	-63.6	H	3.0	-10.4	38.7	1.0	-48.1	-13.0	-35.1	
6.85	-66.8	H	3.0	-9.9	38.1	1.0	-47.0	-13.0	-34.0	
3.42	-66.5	V	3.0	-17.5	38.5	1.0	-55.0	-13.0	-42.0	
5.14	-63.5	V	3.0	-10.7	38.7	1.0	-48.4	-13.0	-35.4	
6.85	-66.1	V	3.0	-9.4	38.1	1.0	-46.6	-13.0	-33.6	
Mid Channel (1732.6MHz)										
3.47	-66.7	H	3.0	-17.3	38.5	1.0	-54.8	-13.0	-41.8	
5.20	-63.8	H	3.0	-10.5	38.7	1.0	-48.2	-13.0	-35.2	
6.93	-66.6	H	3.0	-9.6	38.1	1.0	-46.7	-13.0	-33.7	
3.47	-66.2	V	3.0	-17.0	38.5	1.0	-54.5	-13.0	-41.5	
5.20	-61.7	V	3.0	-8.8	38.7	1.0	-46.5	-13.0	-33.5	
6.93	-66.6	V	3.0	-9.8	38.1	1.0	-46.9	-13.0	-33.9	
High Channel (1752.6MHz)										
3.51	-66.5	H	3.0	-17.1	38.5	1.0	-54.6	-13.0	-41.6	
5.26	-64.9	H	3.0	-11.5	38.7	1.0	-49.1	-13.0	-36.1	
7.01	-66.6	H	3.0	-9.4	38.1	1.0	-46.5	-13.0	-33.5	
3.51	-64.6	V	3.0	-15.3	38.5	1.0	-52.9	-13.0	-39.9	
5.26	-63.9	V	3.0	-10.8	38.7	1.0	-48.5	-13.0	-35.5	
7.01	-65.0	V	3.0	-8.1	38.1	1.0	-45.1	-13.0	-32.1	

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WCDMA Band 4 HSDPA

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9.2. FIELD STRENGTH OF SPURIOUS RADIATION (Ant 2)

9.2.1. GSM

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 4/18/2018
Test Engineer: 12500
Configuration: EUT only
Mode: GPRS 850MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (824.2MHz)										
1.65	-56.8	H	3.0	-15.6	33.7	1.0	-48.4	-13.0	-35.4	
2.47	-68.0	H	3.0	-23.9	34.1	1.0	-57.0	-13.0	-44.0	
3.30	-68.2	H	3.0	-20.0	34.7	1.0	-53.6	-13.0	-40.6	
1.65	-50.5	V	3.0	-7.1	33.7	1.0	-39.8	-13.0	-26.8	
2.47	-69.0	V	3.0	-24.3	34.1	1.0	-57.4	-13.0	-44.4	
3.30	-69.8	V	3.0	-21.3	34.7	1.0	-55.0	-13.0	-42.0	
Mid Channel (836.6MHz)										
1.67	-55.5	H	3.0	-14.2	33.7	1.0	-46.9	-13.0	-33.9	
2.51	-69.0	H	3.0	-24.8	34.1	1.0	-57.9	-13.0	-44.9	
3.35	-69.5	H	3.0	-21.1	34.6	1.0	-54.7	-13.0	-41.7	
1.67	-51.1	V	3.0	-7.7	33.7	1.0	-40.4	-13.0	-27.4	
2.51	-68.2	V	3.0	-23.4	34.1	1.0	-56.5	-13.0	-43.5	
3.35	-69.0	V	3.0	-20.3	34.6	1.0	-54.0	-13.0	-41.0	
High Channel (848.8MHz)										
1.70	-58.6	H	3.0	-17.1	33.7	1.0	-49.8	-13.0	-36.8	
2.55	-67.9	H	3.0	-23.4	34.2	1.0	-56.6	-13.0	-43.6	
3.40	-68.8	H	3.0	-20.2	34.6	1.0	-53.8	-13.0	-40.8	
1.70	-44.8	V	3.0	-1.4	33.7	1.0	-34.0	-13.0	-21.0	
2.55	-69.2	V	3.0	-24.2	34.2	1.0	-57.3	-13.0	-44.3	
3.40	-68.3	V	3.0	-19.5	34.6	1.0	-53.1	-13.0	-40.1	

Rev. 03.19.15

GSM 850MHz GPRS

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 4/18/2018
Test Engineer: 12500
Configuration: EUT only
Mode: EGPRS 850MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (824.2MHz)										
1.65	-58.3	H	3.0	-17.1	33.7	1.0	-49.8	-13.0	-36.8	
2.47	-68.0	H	3.0	-23.9	34.1	1.0	-57.0	-13.0	-44.0	
3.30	-69.1	H	3.0	-20.9	34.7	1.0	-54.5	-13.0	-41.5	
1.65	-54.3	V	3.0	-10.9	33.7	1.0	-43.6	-13.0	-30.6	
2.47	-68.1	V	3.0	-23.4	34.1	1.0	-56.5	-13.0	-43.5	
3.30	-68.2	V	3.0	-19.7	34.7	1.0	-53.4	-13.0	-40.4	
Mid Channel (836.6MHz)										
1.67	-69.6	H	3.0	-28.3	33.7	1.0	-61.0	-13.0	-48.0	
2.51	-65.2	H	3.0	-21.0	34.1	1.0	-54.1	-13.0	-41.1	
3.35	-67.5	H	3.0	-19.1	34.6	1.0	-52.7	-13.0	-39.7	
1.67	-50.9	V	3.0	-7.5	33.7	1.0	-40.2	-13.0	-27.2	
2.51	-65.5	V	3.0	-20.7	34.1	1.0	-53.8	-13.0	-40.8	
3.35	-68.4	V	3.0	-19.7	34.6	1.0	-53.4	-13.0	-40.4	
High Channel (848.8MHz)										
1.70	-65.4	H	3.0	-23.9	33.7	1.0	-56.6	-13.0	-43.6	
2.55	-63.9	H	3.0	-19.4	34.2	1.0	-52.6	-13.0	-39.6	
3.40	-68.7	H	3.0	-20.1	34.6	1.0	-53.7	-13.0	-40.7	
1.70	-54.5	V	3.0	-11.1	33.7	1.0	-43.7	-13.0	-30.7	
2.55	-64.3	V	3.0	-19.3	34.2	1.0	-52.4	-13.0	-39.4	
3.40	-68.0	V	3.0	-19.2	34.6	1.0	-52.8	-13.0	-39.8	

Rev. 03.19.15

GSM 850MHz EGPRS

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 04/17/18
Test Engineer: 10646
Configuration: EUT only
Mode: GPRS 1900MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber G	3m Chamber G	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1850.2MHz)										
3.70	-62.0	H	3.0	-15.3	36.2	1.0	-50.5	-13.0	-37.5	
5.55	-70.5	H	3.0	-20.2	36.1	1.0	-55.3	-13.0	-42.3	
7.40	-72.2	H	3.0	-19.1	35.2	1.0	-53.3	-13.0	-40.3	
3.70	-60.4	V	3.0	-13.3	36.2	1.0	-48.5	-13.0	-35.5	
5.55	-69.6	V	3.0	-19.5	36.1	1.0	-54.6	-13.0	-41.6	
7.40	-72.5	V	3.0	-19.5	35.2	1.0	-53.7	-13.0	-40.7	
Mid Channel (1880.0)										
3.76	-61.3	H	3.0	-14.4	36.2	1.0	-49.6	-13.0	-36.6	
5.64	-70.5	H	3.0	-20.0	36.1	1.0	-55.1	-13.0	-42.1	
7.52	-72.7	H	3.0	-19.5	35.1	1.0	-53.6	-13.0	-40.6	
3.76	-60.2	V	3.0	-12.9	36.2	1.0	-48.0	-13.0	-35.0	
5.64	-70.4	V	3.0	-20.1	36.1	1.0	-55.2	-13.0	-42.2	
7.52	-71.9	V	3.0	-18.8	35.1	1.0	-52.9	-13.0	-39.9	
High Channel (1909.8MHz)										
3.82	-64.0	H	3.0	-17.0	36.1	1.0	-52.1	-13.0	-39.1	
5.73	-70.9	H	3.0	-20.3	36.1	1.0	-55.3	-13.0	-42.3	
7.54	-72.9	H	3.0	-19.7	35.1	1.0	-53.8	-13.0	-40.8	
3.82	-63.4	V	3.0	-15.9	36.1	1.0	-51.1	-13.0	-38.1	
5.73	-70.9	V	3.0	-20.5	36.1	1.0	-55.6	-13.0	-42.6	
7.54	-72.7	V	3.0	-19.5	35.1	1.0	-53.7	-13.0	-40.7	

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GSM 1900MHz GPRS

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 04/17/18
Test Engineer: 10646
Configuration: EUT only
Mode: EGPRS 1900MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1850.2MHz)										
3.70	-61.6	H	3.0	-11.9	34.4	1.0	-45.3	-13.0	-32.3	
5.55	-69.2	H	3.0	-15.8	34.1	1.0	-48.9	-13.0	-35.9	
7.40	-72.5	H	3.0	-16.2	33.6	1.0	-48.8	-13.0	-35.8	
3.70	-59.8	V	3.0	-9.9	34.4	1.0	-43.4	-13.0	-30.4	
5.55	-70.6	V	3.0	-17.0	34.1	1.0	-50.1	-13.0	-37.1	
7.40	-71.7	V	3.0	-15.6	33.6	1.0	-48.2	-13.0	-35.2	
Mid Channel (1880.0)										
3.76	-61.7	H	3.0	-11.7	34.4	1.0	-45.1	-13.0	-32.1	
5.64	-70.2	H	3.0	-16.6	34.1	1.0	-49.7	-13.0	-36.7	
7.52	-71.9	H	3.0	-15.4	33.5	1.0	-48.0	-13.0	-35.0	
3.76	-60.3	V	3.0	-10.3	34.4	1.0	-43.7	-13.0	-30.7	
5.64	-70.1	V	3.0	-16.4	34.1	1.0	-49.5	-13.0	-36.5	
7.52	-71.7	V	3.0	-15.4	33.5	1.0	-47.9	-13.0	-34.9	
High Channel (1909.8MHz)										
3.82	-65.7	H	3.0	-15.5	34.4	1.0	-48.9	-13.0	-35.9	
5.73	-70.9	H	3.0	-17.2	34.1	1.0	-50.3	-13.0	-37.3	
7.54	-72.3	H	3.0	-15.8	33.5	1.0	-48.3	-13.0	-35.3	
3.82	-64.7	V	3.0	-14.5	34.4	1.0	-47.8	-13.0	-34.8	
5.73	-70.1	V	3.0	-16.3	34.1	1.0	-49.4	-13.0	-36.4	
7.54	-72.9	V	3.0	-16.5	33.5	1.0	-49.0	-13.0	-36.0	

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GSM 1900MHz EGPRS

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9.2.2. CDMA

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 05/04/18
Test Engineer: 44410
Configuration: EUT only
Mode: 1xRTT 800MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber E	3m Chamber E	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (817.25MHz)										
1.63	-61.6	H	3.0	-19.1	37.8	1.0	-56.0	-13.0	-43.0	
2.45	-64.1	H	3.0	-19.2	38.4	1.0	-56.6	-13.0	-43.6	
3.27	-66.2	H	3.0	-17.4	38.5	1.0	-54.8	-13.0	-41.8	
1.63	-58.8	V	3.0	-16.7	37.8	1.0	-53.6	-13.0	-40.6	
2.45	-62.4	V	3.0	-17.4	38.4	1.0	-54.7	-13.0	-41.7	
3.27	-65.8	V	3.0	-17.2	38.5	1.0	-54.6	-13.0	-41.6	
Mid Channel (820MHz)										
1.64	-59.6	H	3.0	-17.2	37.8	1.0	-54.0	-13.0	-41.0	
2.46	-64.8	H	3.0	-19.9	38.4	1.0	-57.3	-13.0	-44.3	
3.28	-65.3	H	3.0	-16.4	38.5	1.0	-53.9	-13.0	-40.9	
1.64	-57.3	V	3.0	-15.2	37.8	1.0	-52.1	-13.0	-39.1	
2.46	-63.2	V	3.0	-18.1	38.4	1.0	-55.6	-13.0	-42.6	
3.28	-65.2	V	3.0	-16.8	38.5	1.0	-54.0	-13.0	-41.0	
High Channel (822.75MHz)										
1.65	-63.8	H	3.0	-21.4	37.8	1.0	-58.2	-13.0	-45.2	
2.47	-64.8	H	3.0	-19.8	38.5	1.0	-57.3	-13.0	-44.3	
3.29	-65.2	H	3.0	-16.3	38.5	1.0	-53.7	-13.0	-40.7	
1.65	-59.3	V	3.0	-17.2	37.8	1.0	-54.0	-13.0	-41.0	
2.47	-62.0	V	3.0	-16.9	38.5	1.0	-54.3	-13.0	-41.3	
3.29	-64.7	V	3.0	-16.0	38.5	1.0	-53.5	-13.0	-40.5	

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CDMA BC10 1xRTT

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 05/05/18
Test Engineer: 10649
Configuration: EUT only
Mode: Rev 0/A, 800MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber E	3m Chamber E	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (817.25MHz)										
1.63	-60.0	H	3.0	-17.6	37.8	1.0	-54.4	-13.0	-41.4	
2.45	-65.4	H	3.0	-20.5	38.4	1.0	-57.8	-13.0	-44.8	
3.27	-65.8	H	3.0	-16.9	38.5	1.0	-54.4	-13.0	-41.4	
1.63	-64.0	V	3.0	-22.0	37.8	1.0	-58.8	-13.0	-45.8	
2.45	-64.3	V	3.0	-19.2	38.4	1.0	-56.6	-13.0	-43.6	
3.27	-67.1	V	3.0	-18.5	38.5	1.0	-55.9	-13.0	-42.9	
Mid Channel (820MHz)										
1.64	-58.7	H	3.0	-16.3	37.8	1.0	-53.1	-13.0	-40.1	
2.46	-64.6	H	3.0	-19.7	38.4	1.0	-57.1	-13.0	-44.1	
3.28	-66.2	H	3.0	-17.3	38.5	1.0	-54.8	-13.0	-41.8	
1.64	-57.7	V	3.0	-15.6	37.8	1.0	-52.4	-13.0	-39.4	
2.46	-64.3	V	3.0	-19.2	38.4	1.0	-56.6	-13.0	-43.6	
3.28	-66.4	V	3.0	-17.7	38.5	1.0	-55.2	-13.0	-42.2	
High Channel (822.75MHz)										
1.65	-65.1	H	3.0	-22.7	37.8	1.0	-59.5	-13.0	-46.5	
2.47	-65.7	H	3.0	-20.7	38.5	1.0	-58.2	-13.0	-45.2	
3.29	-66.2	H	3.0	-17.3	38.5	1.0	-54.8	-13.0	-41.8	
1.65	-59.7	V	3.0	-17.5	37.8	1.0	-54.4	-13.0	-41.4	
2.47	-66.9	V	3.0	-21.7	38.5	1.0	-59.1	-13.0	-46.1	
3.29	-66.3	V	3.0	-17.6	38.5	1.0	-55.1	-13.0	-42.1	

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CDMA BC10 1xEV-DO Rev A

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 05/05/18
Test Engineer: 10649
Configuration: EUT only
Mode: 1xRTT 850MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber E	3m Chamber E	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (824.7MHz)										
1.65	-63.6	H	3.0	-21.2	37.8	1.0	-58.0	-13.0	-45.0	
2.47	-64.9	H	3.0	-19.9	38.5	1.0	-57.4	-13.0	-44.4	
3.30	-64.8	H	3.0	-15.8	38.5	1.0	-53.3	-13.0	-40.3	
1.65	-54.9	V	3.0	-12.8	37.8	1.0	-49.6	-13.0	-36.6	
2.47	-60.5	V	3.0	-15.4	38.5	1.0	-52.8	-13.0	-39.8	
3.30	-64.6	V	3.0	-15.9	38.5	1.0	-53.4	-13.0	-40.4	
Mid Channel (836.52MHz)										
1.67	-63.4	H	3.0	-20.9	37.8	1.0	-57.8	-13.0	-44.8	
2.51	-64.8	H	3.0	-19.5	38.6	1.0	-57.1	-13.0	-44.1	
3.35	-65.0	H	3.0	-15.9	38.5	1.0	-53.4	-13.0	-40.4	
1.67	-55.3	V	3.0	-13.1	37.8	1.0	-49.9	-13.0	-36.9	
2.51	-64.8	V	3.0	-19.4	38.6	1.0	-57.0	-13.0	-44.0	
3.35	-65.3	V	3.0	-16.5	38.5	1.0	-54.0	-13.0	-41.0	
High Channel (848.31MHz)										
1.70	-60.8	H	3.0	-18.3	37.9	1.0	-55.1	-13.0	-42.1	
2.54	-65.2	H	3.0	-19.8	38.6	1.0	-57.3	-13.0	-44.3	
3.39	-66.1	H	3.0	-17.0	38.5	1.0	-54.5	-13.0	-41.5	
1.70	-55.8	V	3.0	-13.4	37.9	1.0	-50.3	-13.0	-37.3	
2.54	-65.4	V	3.0	-19.9	38.6	1.0	-57.4	-13.0	-44.4	
3.39	-66.3	V	3.0	-17.3	38.5	1.0	-54.8	-13.0	-41.8	

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CDMA BC0 1xRTT

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 05/05/18
Test Engineer: 10649
Configuration: EUT only
Mode: Rev 0/A 850MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber E	3m Chamber E	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (824.7MHz)										
1.65	-62.6	H	3.0	-20.2	37.8	1.0	-57.0	-13.0	-44.0	
2.47	-65.4	H	3.0	-20.4	38.5	1.0	-57.9	-13.0	-44.9	
3.30	-66.4	H	3.0	-17.4	38.5	1.0	-54.9	-13.0	-41.9	
1.65	-52.7	V	3.0	-10.5	37.8	1.0	-47.4	-13.0	-34.4	
2.47	-64.7	V	3.0	-19.5	38.5	1.0	-57.0	-13.0	-44.0	
3.30	-66.0	V	3.0	-17.3	38.5	1.0	-54.7	-13.0	-41.7	
Mid Channel (836.52MHz)										
1.67	-62.0	H	3.0	-19.5	37.8	1.0	-56.4	-13.0	-43.4	
2.51	-65.5	H	3.0	-20.3	38.6	1.0	-57.8	-13.0	-44.8	
3.35	-65.9	H	3.0	-16.8	38.5	1.0	-54.3	-13.0	-41.3	
1.67	-67.8	V	3.0	-25.5	37.8	1.0	-62.4	-13.0	-49.4	
2.51	-65.7	V	3.0	-20.3	38.6	1.0	-57.9	-13.0	-44.9	
3.35	-65.4	V	3.0	-16.6	38.5	1.0	-54.0	-13.0	-41.0	
High Channel (848.31MHz)										
1.70	-64.5	H	3.0	-21.9	37.9	1.0	-58.7	-13.0	-45.7	
2.54	-66.4	H	3.0	-21.0	38.6	1.0	-58.5	-13.0	-45.5	
3.39	-65.2	H	3.0	-16.1	38.5	1.0	-53.6	-13.0	-40.6	
1.70	-56.5	V	3.0	-14.1	37.9	1.0	-51.0	-13.0	-38.0	
2.54	-66.2	V	3.0	-20.7	38.6	1.0	-58.3	-13.0	-45.3	
3.39	-65.6	V	3.0	-16.7	38.5	1.0	-54.2	-13.0	-41.2	

Rev. 03.19.15

CDMA BC0 1xEV-DO Rev A

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 05/04/18
Test Engineer: 44410
Configuration: EUT only
Mode: 1xRTT 1900MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber E	3m Chamber E	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1851.25MHz)										
3.70	-62.0	H	3.0	-12.1	38.6	1.0	-49.7	-13.0	-36.7	
5.55	-63.2	H	3.0	-9.2	38.6	1.0	-46.8	-13.0	-33.8	
7.41	-65.9	H	3.0	-8.2	37.8	1.0	-45.0	-13.0	-32.0	
3.70	-61.2	V	3.0	-11.3	38.6	1.0	-48.9	-13.0	-35.9	
5.55	-63.2	V	3.0	-9.5	38.6	1.0	-47.1	-13.0	-34.1	
7.41	-65.1	V	3.0	-7.6	37.8	1.0	-44.4	-13.0	-31.4	
Mid Channel (1880MHz)										
3.76	-61.7	H	3.0	-11.6	38.6	1.0	-49.3	-13.0	-36.3	
5.64	-63.8	H	3.0	-9.6	38.5	1.0	-47.1	-13.0	-34.1	
7.52	-65.4	H	3.0	-7.6	37.7	1.0	-44.3	-13.0	-31.3	
3.76	-62.3	V	3.0	-12.3	38.6	1.0	-49.9	-13.0	-36.9	
5.64	-64.7	V	3.0	-10.8	38.5	1.0	-48.3	-13.0	-35.3	
7.52	-66.0	V	3.0	-8.4	37.7	1.0	-45.2	-13.0	-32.2	
High Channel (1908.75MHz)										
3.82	-61.2	H	3.0	-11.0	38.7	1.0	-48.6	-13.0	-35.6	
5.73	-64.8	H	3.0	-10.3	38.5	1.0	-47.8	-13.0	-34.8	
7.64	-66.2	H	3.0	-8.2	37.7	1.0	-44.9	-13.0	-31.9	
3.82	-61.8	V	3.0	-11.6	38.7	1.0	-49.2	-13.0	-36.2	
5.73	-65.0	V	3.0	-10.8	38.5	1.0	-48.3	-13.0	-35.3	
7.64	-66.4	V	3.0	-8.7	37.7	1.0	-45.3	-13.0	-32.3	

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CDMA BC1 1xRTT

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 05/05/18
Test Engineer: 10649
Configuration: EUT only
Mode: Rev 0/A 1900MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber E	3m Chamber E	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1851.25MHz)										
3.70	-63.0	H	3.0	-13.0	38.6	1.0	-50.6	-13.0	-37.6	
5.55	-64.9	H	3.0	-10.8	38.6	1.0	-48.4	-13.0	-35.4	
7.41	-65.9	H	3.0	-8.2	37.8	1.0	-45.0	-13.0	-32.0	
3.70	-63.0	V	3.0	-13.1	38.6	1.0	-50.7	-13.0	-37.7	
5.55	-65.3	V	3.0	-11.6	38.6	1.0	-49.2	-13.0	-36.2	
7.41	-65.9	V	3.0	-8.4	37.8	1.0	-45.2	-13.0	-32.2	
Mid Channel (1880MHz)										
3.76	-62.5	H	3.0	-12.4	38.6	1.0	-50.0	-13.0	-37.0	
5.64	-63.3	H	3.0	-9.1	38.5	1.0	-46.6	-13.0	-33.6	
7.52	-67.5	H	3.0	-9.6	37.7	1.0	-46.4	-13.0	-33.4	
3.76	-61.7	V	3.0	-11.6	38.6	1.0	-49.3	-13.0	-36.3	
5.64	-64.8	V	3.0	-10.9	38.5	1.0	-48.4	-13.0	-35.4	
7.52	-67.1	V	3.0	-9.5	37.7	1.0	-46.2	-13.0	-33.2	
High Channel (1908.75MHz)										
3.82	-62.5	H	3.0	-12.3	38.7	1.0	-49.9	-13.0	-36.9	
5.73	-64.7	H	3.0	-10.3	38.5	1.0	-47.8	-13.0	-34.8	
7.64	-66.0	H	3.0	-8.0	37.7	1.0	-44.7	-13.0	-31.7	
3.82	-63.0	V	3.0	-12.8	38.7	1.0	-50.4	-13.0	-37.4	
5.73	-65.3	V	3.0	-11.2	38.5	1.0	-48.7	-13.0	-35.7	
7.64	-66.4	V	3.0	-8.6	37.7	1.0	-45.3	-13.0	-32.3	

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CDMA BC1 1xEV-DO Rev A

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9.2.3. WCDMA

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 05/01/18
Test Engineer: 10649
Configuration: EUT Only
Mode: REL 99, 850MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber E	3m Chamber E	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (826.4MHz)										
1.65	-65.5	H	3.0	-23.0	37.8	1.0	-59.8	-13.0	-46.8	
2.48	-65.9	H	3.0	-20.8	38.5	1.0	-58.3	-13.0	-45.3	
3.31	-66.0	H	3.0	-17.0	38.5	1.0	-54.5	-13.0	-41.5	
1.65	-64.7	V	3.0	-22.6	37.8	1.0	-59.4	-13.0	-46.4	
2.48	-66.6	V	3.0	-21.3	38.5	1.0	-58.8	-13.0	-45.8	
3.31	-67.0	V	3.0	-18.2	38.5	1.0	-55.7	-13.0	-42.7	
Mid Channel (836.6MHz)										
1.67	-65.9	H	3.0	-23.4	37.8	1.0	-60.2	-13.0	-47.2	
2.51	-66.0	H	3.0	-20.8	38.6	1.0	-58.4	-13.0	-45.4	
3.35	-66.5	H	3.0	-17.4	38.5	1.0	-54.9	-13.0	-41.9	
1.67	-64.8	V	3.0	-22.5	37.8	1.0	-59.4	-13.0	-46.4	
2.51	-65.8	V	3.0	-20.4	38.6	1.0	-58.0	-13.0	-45.0	
3.35	-65.8	V	3.0	-17.0	38.5	1.0	-54.5	-13.0	-41.5	
High Channel (846.6MHz)										
1.69	-65.0	H	3.0	-22.5	37.9	1.0	-59.3	-13.0	-46.3	
2.54	-66.7	H	3.0	-21.3	38.6	1.0	-58.8	-13.0	-45.8	
3.39	-66.6	H	3.0	-17.5	38.5	1.0	-55.0	-13.0	-42.0	
1.69	-63.6	V	3.0	-21.3	37.9	1.0	-58.1	-13.0	-45.1	
2.54	-66.1	V	3.0	-20.6	38.6	1.0	-58.1	-13.0	-45.1	
3.39	-65.5	V	3.0	-16.6	38.5	1.0	-54.1	-13.0	-41.1	

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WCDMA Band 5 Rel 99

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 05/01/18
Test Engineer: 10649
Configuration: EUT Only
Mode: HSDPA 850MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber E	3m Chamber E	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (826.4MHz)										
1.65	-65.4	H	3.0	-22.9	37.8	1.0	-59.8	-13.0	-46.8	
2.48	-64.5	H	3.0	-19.5	38.5	1.0	-57.0	-13.0	-44.0	
3.31	-66.7	H	3.0	-17.7	38.5	1.0	-55.2	-13.0	-42.2	
1.65	-63.6	V	3.0	-21.4	37.8	1.0	-58.2	-13.0	-45.2	
2.48	-65.4	V	3.0	-20.2	38.5	1.0	-57.7	-13.0	-44.7	
3.31	-66.8	V	3.0	-18.1	38.5	1.0	-55.6	-13.0	-42.6	
Mid Channel (836.6MHz)										
1.67	-64.6	H	3.0	-22.1	37.8	1.0	-59.0	-13.0	-46.0	
2.51	-65.1	H	3.0	-19.8	38.6	1.0	-57.4	-13.0	-44.4	
3.35	-65.0	H	3.0	-15.9	38.5	1.0	-53.4	-13.0	-40.4	
1.67	-65.1	V	3.0	-22.9	37.8	1.0	-59.7	-13.0	-46.7	
2.51	-66.9	V	3.0	-21.5	38.6	1.0	-59.1	-13.0	-46.1	
3.35	-65.3	V	3.0	-16.5	38.5	1.0	-54.0	-13.0	-41.0	
High Channel (846.6MHz)										
1.69	-64.4	H	3.0	-21.9	37.9	1.0	-58.7	-13.0	-45.7	
2.54	-66.1	H	3.0	-20.7	38.6	1.0	-58.3	-13.0	-45.3	
3.39	-66.0	H	3.0	-16.8	38.5	1.0	-54.3	-13.0	-41.3	
1.69	-65.9	V	3.0	-23.5	37.9	1.0	-60.4	-13.0	-47.4	
2.54	-66.6	V	3.0	-21.0	38.6	1.0	-58.6	-13.0	-45.6	
3.39	-65.5	V	3.0	-16.6	38.5	1.0	-54.1	-13.0	-41.1	

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WCDMA Band 5 HSDPA

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 05/01/18
Test Engineer: 10649
Configuration: EUT Only
Mode: REL 99, 1900MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1852.4MHz)										
3.70	-63.6	H	3.0	-13.8	34.4	1.0	-47.3	-13.0	-34.3	
5.56	-65.5	H	3.0	-12.1	34.1	1.0	-45.2	-13.0	-32.2	
7.41	-67.5	H	3.0	-11.1	33.6	1.0	-43.7	-13.0	-30.7	
3.70	-63.2	V	3.0	-13.3	34.4	1.0	-46.8	-13.0	-33.8	
5.55	-64.4	V	3.0	-10.8	34.1	1.0	-43.9	-13.0	-30.9	
7.42	-68.1	V	3.0	-11.9	33.6	1.0	-44.5	-13.0	-31.5	
Mid Channel (1880MHz)										
3.76	-61.7	H	3.0	-11.7	34.4	1.0	-45.1	-13.0	-32.1	
5.64	-65.7	H	3.0	-12.1	34.1	1.0	-45.3	-13.0	-32.3	
7.52	-67.7	H	3.0	-11.2	33.5	1.0	-43.7	-13.0	-30.7	
3.76	-62.9	V	3.0	-12.8	34.4	1.0	-46.2	-13.0	-33.2	
5.64	-65.0	V	3.0	-11.3	34.1	1.0	-44.4	-13.0	-31.4	
7.52	-67.8	V	3.0	-11.5	33.5	1.0	-44.0	-13.0	-31.0	
High Channel (1907.6MHz)										
3.81	-60.5	H	3.0	-10.4	34.4	1.0	-43.7	-13.0	-30.7	
5.72	-63.2	H	3.0	-9.5	34.1	1.0	-42.6	-13.0	-29.6	
7.66	-66.0	H	3.0	-9.3	33.4	1.0	-41.7	-13.0	-28.7	
3.82	-62.2	V	3.0	-11.9	34.4	1.0	-45.3	-13.0	-32.3	
5.72	-63.1	V	3.0	-9.3	34.1	1.0	-42.4	-13.0	-29.4	
7.63	-65.5	V	3.0	-9.1	33.4	1.0	-41.5	-13.0	-28.5	

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WCDMA Band 2 Rel 99

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 05/01/18
Test Engineer: 10649
Configuration: EUT Only
Mode: HSDPA 1900MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber E	3m Chamber E	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1852.4MHz)										
3.70	-63.6	H	3.0	-13.7	38.6	1.0	-51.3	-13.0	-38.3	
5.56	-64.7	H	3.0	-10.6	38.6	1.0	-48.2	-13.0	-35.2	
7.41	-67.4	H	3.0	-9.8	37.8	1.0	-46.6	-13.0	-33.6	
9.26	-67.7	H	3.0	-7.8	36.6	1.0	-43.4	-13.0	-30.4	
3.70	-62.8	V	3.0	-12.9	38.6	1.0	-50.6	-13.0	-37.6	
5.56	-65.4	V	3.0	-11.6	38.6	1.0	-49.2	-13.0	-36.2	
7.41	-66.1	V	3.0	-8.7	37.8	1.0	-45.5	-13.0	-32.5	
9.26	-66.7	V	3.0	-6.9	36.6	1.0	-42.5	-13.0	-29.5	
Mid Channel (1880MHz)										
3.76	-62.7	H	3.0	-12.6	38.6	1.0	-50.2	-13.0	-37.2	
5.64	-65.7	H	3.0	-11.5	38.5	1.0	-49.0	-13.0	-36.0	
7.52	-67.0	H	3.0	-9.2	37.7	1.0	-45.9	-13.0	-32.9	
9.40	-67.3	H	3.0	-7.3	36.5	1.0	-42.8	-13.0	-29.8	
3.76	-64.1	V	3.0	-14.0	38.6	1.0	-51.7	-13.0	-38.7	
5.64	-64.9	V	3.0	-11.0	38.5	1.0	-48.5	-13.0	-35.5	
7.52	-68.2	V	3.0	-10.6	37.7	1.0	-47.3	-13.0	-34.3	
9.40	-66.6	V	3.0	-6.6	36.5	1.0	-42.1	-13.0	-29.1	
High Channel (1907.6MHz)										
3.82	-62.3	H	3.0	-12.1	38.7	1.0	-49.7	-13.0	-36.7	
5.72	-63.4	H	3.0	-9.8	38.5	1.0	-46.5	-13.0	-33.5	
7.63	-65.6	H	3.0	-7.6	37.7	1.0	-44.3	-13.0	-31.3	
9.54	-66.5	H	3.0	-6.2	36.4	1.0	-41.7	-13.0	-28.7	
3.82	-60.8	V	3.0	-10.6	38.7	1.0	-48.2	-13.0	-35.2	
5.72	-64.2	V	3.0	-10.1	38.5	1.0	-47.6	-13.0	-34.6	
7.63	-65.5	V	3.0	-7.7	37.7	1.0	-44.4	-13.0	-31.4	
9.54	-67.3	V	3.0	-7.1	36.4	1.0	-42.5	-13.0	-29.5	

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WCDMA Band 2 HSDPA

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High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 05/01/18
Test Engineer: 10649
Configuration: EUT Only
Mode: REL 99, 1700MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber E	3m Chamber E	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1712.4MHz)										
3.42	-67.1	H	3.0	-17.9	38.5	1.0	-55.4	-13.0	-42.4	
5.14	-62.6	H	3.0	-9.5	38.7	1.0	-47.2	-13.0	-34.2	
6.85	-67.2	H	3.0	-10.3	38.1	1.0	-47.5	-13.0	-34.5	
8.56	-65.9	H	3.0	-6.8	37.1	1.0	-42.9	-13.0	-29.9	
3.42	-66.7	V	3.0	-17.6	38.5	1.0	-55.2	-13.0	-42.2	
5.14	-63.7	V	3.0	-10.8	38.7	1.0	-48.5	-13.0	-35.5	
6.85	-67.3	V	3.0	-10.6	38.1	1.0	-47.8	-13.0	-34.8	
8.56	-65.0	V	3.0	-6.0	37.1	1.0	-42.1	-13.0	-29.1	
Mid Channel (1732.6MHz)										
3.47	-65.2	H	3.0	-15.8	38.5	1.0	-53.4	-13.0	-40.4	
5.20	-64.7	H	3.0	-11.4	38.7	1.0	-49.1	-13.0	-36.1	
6.93	-65.0	H	3.0	-8.0	38.1	1.0	-45.1	-13.0	-32.1	
8.66	-66.8	H	3.0	-7.6	37.0	1.0	-43.6	-13.0	-30.6	
3.47	-65.0	V	3.0	-15.8	38.5	1.0	-53.3	-13.0	-40.3	
5.20	-64.4	V	3.0	-11.5	38.7	1.0	-49.2	-13.0	-36.2	
6.93	-65.3	V	3.0	-8.5	38.1	1.0	-45.7	-13.0	-32.7	
8.66	-67.3	V	3.0	-8.2	37.0	1.0	-44.2	-13.0	-31.2	
High Channel (1752.6MHz)										
3.51	-67.3	H	3.0	-17.8	38.5	1.0	-55.4	-13.0	-42.4	
5.26	-65.3	H	3.0	-11.9	38.7	1.0	-49.5	-13.0	-36.5	
7.01	-67.1	H	3.0	-9.9	38.1	1.0	-46.9	-13.0	-33.9	
8.76	-67.5	H	3.0	-8.2	36.9	1.0	-44.2	-13.0	-31.2	
3.51	-66.2	V	3.0	-16.8	38.5	1.0	-54.5	-13.0	-41.5	
5.26	-66.1	V	3.0	-13.0	38.7	1.0	-50.7	-13.0	-37.7	
7.01	-67.4	V	3.0	-10.5	38.1	1.0	-47.5	-13.0	-34.5	
8.76	-67.8	V	3.0	-8.6	36.9	1.0	-44.6	-13.0	-31.6	

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WCDMA Band 4 Rel 99

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 05/01/18
Test Engineer: 10649
Configuration: EUT Only
Mode: HSDPA 1700MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber E	3m Chamber E	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1712.4MHz)										
3.42	-67.9	H	3.0	-18.6	38.5	1.0	-56.1	-13.0	-43.1	
5.14	-63.9	H	3.0	-10.7	38.7	1.0	-48.4	-13.0	-35.4	
6.85	-66.8	H	3.0	-10.0	38.1	1.0	-47.1	-13.0	-34.1	
8.56	-63.7	H	3.0	-4.7	37.1	1.0	-40.7	-13.0	-27.7	
3.42	-68.2	V	3.0	-19.2	38.5	1.0	-56.7	-13.0	-43.7	
5.14	-64.4	V	3.0	-11.6	38.7	1.0	-49.3	-13.0	-36.3	
6.85	-67.1	V	3.0	-10.5	38.1	1.0	-47.7	-13.0	-34.7	
8.56	-66.9	V	3.0	-8.8	37.1	1.0	-44.0	-13.0	-31.0	
Mid Channel (1732.6MHz)										
3.47	-65.6	H	3.0	-16.2	38.5	1.0	-53.7	-13.0	-40.7	
5.20	-63.0	H	3.0	-9.7	38.7	1.0	-47.4	-13.0	-34.4	
6.93	-65.2	H	3.0	-8.1	38.1	1.0	-45.2	-13.0	-32.2	
8.66	-67.4	H	3.0	-8.2	37.0	1.0	-44.2	-13.0	-31.2	
3.47	-64.8	V	3.0	-15.6	38.5	1.0	-53.1	-13.0	-40.1	
5.20	-65.2	V	3.0	-12.2	38.7	1.0	-49.9	-13.0	-36.9	
6.93	-65.3	V	3.0	-8.5	38.1	1.0	-45.6	-13.0	-32.6	
8.66	-66.5	V	3.0	-7.5	37.0	1.0	-43.5	-13.0	-30.5	
High Channel (1752.6MHz)										
3.51	-65.6	H	3.0	-16.1	38.5	1.0	-53.6	-13.0	-40.6	
5.26	-64.4	H	3.0	-11.0	38.7	1.0	-48.7	-13.0	-35.7	
7.01	-66.0	H	3.0	-8.8	38.1	1.0	-45.9	-13.0	-32.9	
8.76	-67.5	H	3.0	-8.2	36.9	1.0	-44.1	-13.0	-31.1	
3.51	-65.6	V	3.0	-16.2	38.5	1.0	-53.8	-13.0	-40.8	
5.26	-65.0	V	3.0	-11.9	38.7	1.0	-49.6	-13.0	-36.6	
7.01	-67.0	V	3.0	-10.1	38.1	1.0	-47.1	-13.0	-34.1	
8.76	-68.4	V	3.0	-9.2	36.9	1.0	-45.2	-13.0	-32.2	

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WCDMA Band 4 HSDPA

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9.3. FIELD STRENGTH OF SPURIOUS RADIATION (Ant 3)

9.3.1. GSM

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 04/18/18
Test Engineer: 12500
Configuration: EUT only
Mode: GPRS 1900MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1850.2MHz)										
3.70	-66.8	H	3.0	-17.0	34.4	1.0	-50.5	-13.0	-37.5	
5.55	-69.2	H	3.0	-15.8	34.1	1.0	-48.9	-13.0	-35.9	
7.40	-69.7	H	3.0	-13.4	33.6	1.0	-46.0	-13.0	-33.0	
3.70	-67.7	V	3.0	-17.8	34.4	1.0	-51.3	-13.0	-38.3	
5.55	-67.9	V	3.0	-14.3	34.1	1.0	-47.4	-13.0	-34.4	
7.40	-69.3	V	3.0	-13.2	33.6	1.0	-45.8	-13.0	-32.8	
Mid Channel (1880.0)										
3.76	-66.9	H	3.0	-16.9	34.4	1.0	-50.3	-13.0	-37.3	
5.64	-69.5	H	3.0	-15.9	34.1	1.0	-49.0	-13.0	-36.0	
7.52	-69.2	H	3.0	-12.7	33.5	1.0	-45.2	-13.0	-32.2	
3.76	-66.7	V	3.0	-16.6	34.4	1.0	-50.0	-13.0	-37.0	
5.64	-68.2	V	3.0	-14.5	34.1	1.0	-47.6	-13.0	-34.6	
7.52	-69.7	V	3.0	-13.4	33.5	1.0	-45.9	-13.0	-32.9	
High Channel (1909.8MHz)										
3.82	-67.2	H	3.0	-17.0	34.4	1.0	-50.4	-13.0	-37.4	
5.73	-69.9	H	3.0	-16.2	34.1	1.0	-49.3	-13.0	-36.3	
7.54	-69.3	H	3.0	-12.8	33.5	1.0	-45.3	-13.0	-32.3	
3.82	-66.5	V	3.0	-16.2	34.4	1.0	-49.6	-13.0	-36.6	
5.73	-68.9	V	3.0	-15.0	34.1	1.0	-48.1	-13.0	-35.1	
7.54	-69.7	V	3.0	-13.4	33.5	1.0	-45.9	-13.0	-32.9	

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GSM 1900MHz GPRS

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 04/18/18
Test Engineer: 12500
Configuration: EUT only
Mode: EGPRS 1900MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1850.2MHz)										
3.70	-68.2	H	3.0	-18.5	34.4	1.0	-51.9	-13.0	-38.9	
5.55	-68.6	H	3.0	-16.2	34.1	1.0	-49.3	-13.0	-36.3	
7.40	-70.7	H	3.0	-14.4	33.6	1.0	-47.0	-13.0	-34.0	
3.70	-67.5	V	3.0	-17.6	34.4	1.0	-51.1	-13.0	-38.1	
5.55	-68.9	V	3.0	-15.3	34.1	1.0	-48.4	-13.0	-35.4	
7.40	-68.8	V	3.0	-12.7	33.6	1.0	-45.3	-13.0	-32.3	
Mid Channel (1880.0)										
3.76	-67.0	H	3.0	-17.0	34.4	1.0	-50.4	-13.0	-37.4	
5.64	-68.1	H	3.0	-14.5	34.1	1.0	-47.6	-13.0	-34.6	
7.52	-70.5	H	3.0	-14.0	33.5	1.0	-46.5	-13.0	-33.5	
3.76	-66.4	V	3.0	-16.3	34.4	1.0	-49.7	-13.0	-36.7	
5.64	-68.8	V	3.0	-15.1	34.1	1.0	-48.2	-13.0	-35.2	
7.52	-69.2	V	3.0	-12.9	33.5	1.0	-45.4	-13.0	-32.4	
High Channel (1909.8MHz)										
3.82	-65.9	H	3.0	-15.7	34.4	1.0	-49.1	-13.0	-36.1	
5.73	-67.2	H	3.0	-13.5	34.1	1.0	-46.6	-13.0	-33.6	
7.54	-68.3	H	3.0	-11.8	33.5	1.0	-44.3	-13.0	-31.3	
3.82	-67.1	V	3.0	-16.9	34.4	1.0	-50.2	-13.0	-37.2	
5.73	-69.0	V	3.0	-15.1	34.1	1.0	-48.2	-13.0	-35.2	
7.54	-67.6	V	3.0	-11.3	33.5	1.0	-43.8	-13.0	-30.8	

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GSM 1900MHz EGPRS

9.3.2. WCDMA

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 5/12018
Test Engineer: 10649
Configuration: EUT Only
Mode: REL 99, 1900MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber E	3m Chamber E	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1852.4MHz)										
3.70	-62.0	H	3.0	-12.1	38.6	1.0	-49.7	-13.0	-36.7	
5.56	-62.8	H	3.0	-8.7	38.6	1.0	-46.3	-13.0	-33.3	
7.41	-65.6	H	3.0	-7.9	37.8	1.0	-44.7	-13.0	-31.7	
3.70	-61.9	V	3.0	-12.0	38.6	1.0	-49.6	-13.0	-36.6	
5.55	-65.5	V	3.0	-11.7	38.6	1.0	-49.3	-13.0	-36.3	
7.42	-66.0	V	3.0	-8.5	37.8	1.0	-45.3	-13.0	-32.3	
Mid Channel (1880MHz)										
3.76	-62.4	H	3.0	-12.3	38.6	1.0	-49.9	-13.0	-36.9	
5.64	-64.6	H	3.0	-10.4	38.5	1.0	-47.9	-13.0	-34.9	
7.52	-67.7	H	3.0	-9.8	37.7	1.0	-46.6	-13.0	-33.6	
3.76	-62.0	V	3.0	-11.9	38.6	1.0	-49.6	-13.0	-36.6	
5.64	-63.7	V	3.0	-9.8	38.5	1.0	-47.3	-13.0	-34.3	
7.52	-66.8	V	3.0	-9.2	37.7	1.0	-45.9	-13.0	-32.9	
High Channel (1907.6MHz)										
3.81	-62.9	H	3.0	-12.7	38.7	1.0	-50.3	-13.0	-37.3	
5.72	-65.9	H	3.0	-11.5	38.5	1.0	-49.0	-13.0	-36.0	
7.66	-66.0	H	3.0	-8.0	37.7	1.0	-44.7	-13.0	-31.7	
3.82	-61.9	V	3.0	-11.7	38.7	1.0	-49.3	-13.0	-36.3	
5.72	-65.5	V	3.0	-11.4	38.5	1.0	-48.9	-13.0	-35.9	
7.63	-66.0	V	3.0	-8.2	37.7	1.0	-44.9	-13.0	-31.9	

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WCDMA Band 2 Rel 99

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 05/01/18
Test Engineer: 10649
Configuration: EUT Only
Mode: HSDPA 1900MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber E	3m Chamber E	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1852.4MHz)										
3.70	-62.8	H	3.0	-12.9	38.6	1.0	-50.5	-13.0	-37.5	
5.56	-64.3	H	3.0	-10.2	38.6	1.0	-47.8	-13.0	-34.8	
7.41	-66.6	H	3.0	-8.9	37.8	1.0	-45.8	-13.0	-32.8	
9.26	-66.3	H	3.0	-6.4	36.6	1.0	-42.0	-13.0	-29.0	
3.70	-62.6	V	3.0	-12.7	38.6	1.0	-50.3	-13.0	-37.3	
5.56	-64.6	V	3.0	-10.8	38.6	1.0	-48.4	-13.0	-35.4	
7.41	-67.5	V	3.0	-10.0	37.8	1.0	-46.8	-13.0	-33.8	
9.26	-67.0	V	3.0	-7.2	36.6	1.0	-42.8	-13.0	-29.8	
Mid Channel (1880MHz)										
3.76	-63.5	H	3.0	-13.4	38.6	1.0	-51.0	-13.0	-38.0	
5.64	-64.5	H	3.0	-10.3	38.5	1.0	-47.8	-13.0	-34.8	
7.52	-67.4	H	3.0	-9.5	37.7	1.0	-46.3	-13.0	-33.3	
9.40	-66.8	H	3.0	-6.8	36.5	1.0	-42.3	-13.0	-29.3	
3.76	-62.3	V	3.0	-12.3	38.6	1.0	-49.9	-13.0	-36.9	
5.64	-64.9	V	3.0	-11.0	38.5	1.0	-48.5	-13.0	-35.5	
7.52	-67.7	V	3.0	-10.1	37.7	1.0	-46.8	-13.0	-33.8	
9.40	-67.3	V	3.0	-7.3	36.5	1.0	-42.8	-13.0	-29.8	
High Channel (1907.6MHz)										
3.82	-61.4	H	3.0	-11.1	38.7	1.0	-48.8	-13.0	-35.8	
5.72	-63.2	H	3.0	-8.8	38.5	1.0	-46.3	-13.0	-33.3	
7.63	-64.9	H	3.0	-7.0	37.7	1.0	-43.7	-13.0	-30.7	
9.54	-67.3	H	3.0	-7.1	36.4	1.0	-42.5	-13.0	-29.5	
3.82	-62.4	V	3.0	-12.2	38.7	1.0	-49.9	-13.0	-36.9	
5.72	-64.4	V	3.0	-10.3	38.5	1.0	-47.8	-13.0	-34.8	
7.63	-66.0	V	3.0	-8.3	37.7	1.0	-45.0	-13.0	-32.0	
9.54	-67.7	V	3.0	-7.5	36.4	1.0	-42.9	-13.0	-29.9	

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WCDMA Band 2 HSDPA

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High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 05/01/18
Test Engineer: 10649
Configuration: EUT Only
Mode: REL 99, 1700MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1712.4MHz)										
3.42	-64.8	H	3.0	-16.1	34.6	1.0	-49.7	-13.0	-36.7	
5.14	-64.3	H	3.0	-11.6	34.2	1.0	-44.7	-13.0	-31.7	
6.85	-65.2	H	3.0	-9.7	33.9	1.0	-42.6	-13.0	-29.6	
8.56	-67.2	H	3.0	-9.4	32.7	1.0	-41.1	-13.0	-28.1	
3.42	-64.8	V	3.0	-15.8	34.6	1.0	-49.4	-13.0	-36.4	
5.14	-64.3	V	3.0	-11.3	34.2	1.0	-44.5	-13.0	-31.5	
6.85	-64.6	V	3.0	-9.2	33.9	1.0	-42.2	-13.0	-29.2	
8.56	-66.9	V	3.0	-9.2	32.7	1.0	-40.9	-13.0	-27.9	
Mid Channel (1732.6MHz)										
3.47	-65.6	H	3.0	-16.8	34.6	1.0	-50.3	-13.0	-37.3	
5.20	-64.0	H	3.0	-11.1	34.2	1.0	-44.3	-13.0	-31.3	
6.93	-65.0	H	3.0	-9.3	33.9	1.0	-42.3	-13.0	-29.3	
8.66	-65.8	H	3.0	-7.8	32.6	1.0	-39.4	-13.0	-26.4	
3.47	-64.8	V	3.0	-15.8	34.6	1.0	-49.3	-13.0	-36.3	
5.20	-64.1	V	3.0	-10.9	34.2	1.0	-44.1	-13.0	-31.1	
6.93	-65.4	V	3.0	-9.9	33.9	1.0	-42.8	-13.0	-29.8	
8.66	-67.2	V	3.0	-9.3	32.6	1.0	-41.0	-13.0	-28.0	
High Channel (1752.6MHz)										
3.51	-65.6	H	3.0	-16.6	34.5	1.0	-50.1	-13.0	-37.1	
5.26	-65.1	H	3.0	-12.1	34.2	1.0	-45.3	-13.0	-32.3	
7.01	-66.9	H	3.0	-11.1	33.9	1.0	-44.0	-13.0	-31.0	
8.76	-68.1	H	3.0	-9.9	32.6	1.0	-41.5	-13.0	-28.5	
3.51	-65.6	V	3.0	-16.4	34.5	1.0	-50.0	-13.0	-37.0	
5.26	-64.7	V	3.0	-11.4	34.2	1.0	-44.6	-13.0	-31.6	
7.01	-65.3	V	3.0	-9.7	33.9	1.0	-42.6	-13.0	-29.6	
8.76	-66.8	V	3.0	-8.8	32.6	1.0	-40.4	-13.0	-27.4	

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WCDMA Band 4 Rel 99

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 05/01/18
Test Engineer: 10649
Configuration: EUT Only
Mode: HSDPA 1700MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber E	3m Chamber E	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1712.4MHz)										
3.42	-66.5	H	3.0	-17.3	38.5	1.0	-54.8	-13.0	-41.8	
5.14	-63.3	H	3.0	-10.2	38.7	1.0	-47.9	-13.0	-34.9	
6.85	-65.4	H	3.0	-8.6	38.1	1.0	-45.7	-13.0	-32.7	
8.56	-65.6	H	3.0	-6.6	37.1	1.0	-42.6	-13.0	-29.6	
3.42	-66.5	V	3.0	-17.5	38.5	1.0	-55.0	-13.0	-42.0	
5.14	-63.3	V	3.0	-10.5	38.7	1.0	-48.2	-13.0	-35.2	
6.85	-65.4	V	3.0	-8.8	38.1	1.0	-46.0	-13.0	-33.0	
8.56	-65.9	V	3.0	-6.9	37.1	1.0	-43.0	-13.0	-30.0	
Mid Channel (1732.6MHz)										
3.47	-65.6	H	3.0	-16.2	38.5	1.0	-53.8	-13.0	-40.8	
5.20	-64.9	H	3.0	-11.6	38.7	1.0	-49.3	-13.0	-36.3	
6.93	-65.9	H	3.0	-8.8	38.1	1.0	-45.9	-13.0	-32.9	
8.66	-67.7	H	3.0	-8.6	37.0	1.0	-44.6	-13.0	-31.6	
3.47	-66.1	V	3.0	-16.9	38.5	1.0	-54.4	-13.0	-41.4	
5.20	-64.8	V	3.0	-11.8	38.7	1.0	-49.5	-13.0	-36.5	
6.93	-64.5	V	3.0	-7.7	38.1	1.0	-44.8	-13.0	-31.8	
8.66	-68.0	V	3.0	-9.0	37.0	1.0	-45.0	-13.0	-32.0	
High Channel (1752.6MHz)										
3.51	-65.3	H	3.0	-15.8	38.5	1.0	-53.4	-13.0	-40.4	
5.26	-65.4	H	3.0	-12.0	38.7	1.0	-49.7	-13.0	-36.7	
7.01	-66.7	H	3.0	-9.5	38.1	1.0	-46.5	-13.0	-33.5	
8.76	-67.6	H	3.0	-8.3	36.9	1.0	-44.2	-13.0	-31.2	
3.51	-66.1	V	3.0	-16.8	38.5	1.0	-54.3	-13.0	-41.3	
5.26	-65.5	V	3.0	-12.4	38.7	1.0	-50.0	-13.0	-37.0	
7.01	-66.9	V	3.0	-9.9	38.1	1.0	-47.0	-13.0	-34.0	
8.76	-67.0	V	3.0	-7.8	36.9	1.0	-43.7	-13.0	-30.7	

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WCDMA Band 4 HSDPA

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9.4. FIELD STRENGTH OF SPURIOUS RADIATION (Ant 4)

9.4.1. GSM

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 04/18/18
Test Engineer: 12500
Configuration: EUT only
Mode: GPRS 1900MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1850.2MHz)										
3.70	-62.2	H	3.0	-12.5	34.4	1.0	-45.9	-13.0	-32.9	
5.55	-69.3	H	3.0	-15.9	34.1	1.0	-49.0	-13.0	-36.0	
7.40	-70.4	H	3.0	-14.1	33.6	1.0	-46.7	-13.0	-33.7	
3.70	-65.7	V	3.0	-15.9	34.4	1.0	-49.3	-13.0	-36.3	
5.55	-69.9	V	3.0	-16.3	34.1	1.0	-49.4	-13.0	-36.4	
7.40	-69.0	V	3.0	-12.9	33.6	1.0	-45.5	-13.0	-32.5	
Mid Channel (1880.0)										
3.76	-60.8	H	3.0	-10.8	34.4	1.0	-44.2	-13.0	-31.2	
5.64	-67.4	H	3.0	-13.8	34.1	1.0	-46.9	-13.0	-33.9	
7.52	-69.1	H	3.0	-12.7	33.5	1.0	-45.2	-13.0	-32.2	
3.76	-65.7	V	3.0	-15.6	34.4	1.0	-49.0	-13.0	-36.0	
5.64	-69.7	V	3.0	-15.9	34.1	1.0	-49.0	-13.0	-36.0	
7.52	-69.7	V	3.0	-13.4	33.5	1.0	-45.9	-13.0	-32.9	
High Channel (1909.8MHz)										
3.82	-61.5	H	3.0	-11.3	34.4	1.0	-44.7	-13.0	-31.7	
5.73	-69.5	H	3.0	-15.8	34.1	1.0	-48.9	-13.0	-35.9	
7.54	-69.7	H	3.0	-13.2	33.5	1.0	-45.7	-13.0	-32.7	
3.82	-67.3	V	3.0	-17.0	34.4	1.0	-50.4	-13.0	-37.4	
5.73	-68.4	V	3.0	-14.5	34.1	1.0	-47.6	-13.0	-34.6	
7.54	-70.0	V	3.0	-13.7	33.5	1.0	-46.2	-13.0	-33.2	

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GSM 1900MHz GPRS

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 04/18/18
Test Engineer: 12500
Configuration: EUT only
Mode: EGPRS 1900MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1850.2MHz)										
3.70	-67.7	H	3.0	-17.9	34.4	1.0	-51.4	-13.0	-38.4	
5.55	-68.6	H	3.0	-15.2	34.1	1.0	-48.3	-13.0	-35.3	
7.40	-70.0	H	3.0	-13.7	33.6	1.0	-46.3	-13.0	-33.3	
3.70	-68.7	V	3.0	-18.8	34.4	1.0	-52.3	-13.0	-39.3	
5.55	-69.5	V	3.0	-15.8	34.1	1.0	-49.0	-13.0	-36.0	
7.40	-68.5	V	3.0	-12.4	33.6	1.0	-45.0	-13.0	-32.0	
Mid Channel (1880.0)										
3.76	-68.1	H	3.0	-18.2	34.4	1.0	-51.6	-13.0	-38.6	
5.64	-64.7	H	3.0	-11.1	34.1	1.0	-44.2	-13.0	-31.2	
7.52	-69.4	H	3.0	-12.9	33.5	1.0	-45.4	-13.0	-32.4	
3.76	-67.4	V	3.0	-17.3	34.4	1.0	-50.7	-13.0	-37.7	
5.64	-69.4	V	3.0	-15.7	34.1	1.0	-48.8	-13.0	-35.8	
7.52	-68.7	V	3.0	-12.4	33.5	1.0	-44.9	-13.0	-31.9	
High Channel (1909.8MHz)										
3.82	-65.1	H	3.0	-14.9	34.4	1.0	-48.3	-13.0	-35.3	
5.73	-68.7	H	3.0	-15.0	34.1	1.0	-48.1	-13.0	-35.1	
7.54	-70.4	H	3.0	-13.9	33.5	1.0	-46.4	-13.0	-33.4	
3.82	-67.1	V	3.0	-16.8	34.4	1.0	-50.2	-13.0	-37.2	
5.73	-68.9	V	3.0	-15.0	34.1	1.0	-48.1	-13.0	-35.1	
7.54	-69.2	V	3.0	-12.9	33.5	1.0	-45.4	-13.0	-32.4	

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GSM 1900MHz EGPRS

9.4.2. WCDMA

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 4/302018
Test Engineer: 10649
Configuration: EUT Only
Mode: REL 99, 1900MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber E	3m Chamber E	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1852.4MHz)										
3.70	-65.1	H	3.0	-15.1	38.6	1.0	-52.7	-13.0	-39.7	
5.56	-67.6	H	3.0	-13.5	38.6	1.0	-51.0	-13.0	-38.0	
7.41	-67.4	H	3.0	-9.7	37.8	1.0	-46.5	-13.0	-33.5	
3.70	-65.5	V	3.0	-15.6	38.6	1.0	-53.2	-13.0	-40.2	
5.55	-67.8	V	3.0	-14.0	38.6	1.0	-51.6	-13.0	-38.6	
7.42	-68.6	V	3.0	-11.1	37.8	1.0	-47.9	-13.0	-34.9	
Mid Channel (1880MHz)										
3.76	-64.4	H	3.0	-14.3	38.6	1.0	-51.9	-13.0	-38.9	
5.64	-66.4	H	3.0	-12.2	38.5	1.0	-49.7	-13.0	-36.7	
7.52	-67.6	H	3.0	-9.8	37.7	1.0	-46.5	-13.0	-33.5	
3.76	-64.8	V	3.0	-14.8	38.6	1.0	-52.4	-13.0	-39.4	
5.64	-67.1	V	3.0	-13.2	38.5	1.0	-50.7	-13.0	-37.7	
7.52	-68.7	V	3.0	-11.1	37.7	1.0	-47.8	-13.0	-34.8	
High Channel (1907.6MHz)										
3.81	-62.7	H	3.0	-12.4	38.7	1.0	-50.1	-13.0	-37.1	
5.72	-67.0	H	3.0	-12.6	38.5	1.0	-50.1	-13.0	-37.1	
7.66	-67.1	H	3.0	-9.1	37.7	1.0	-45.8	-13.0	-32.8	
3.82	-64.8	V	3.0	-14.6	38.7	1.0	-52.2	-13.0	-39.2	
5.72	-67.7	V	3.0	-13.6	38.5	1.0	-51.1	-13.0	-38.1	
7.63	-68.9	V	3.0	-11.1	37.7	1.0	-47.8	-13.0	-34.8	

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WCDMA Band 2 Rel 99

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 04/30/18
Test Engineer: 10649
Configuration: EUT Only
Mode: HSDPA 1900MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber E	3m Chamber E	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1852.4MHz)										
3.70	-51.0	H	3.0	-1.1	38.6	1.0	-38.7	-13.0	-25.7	
5.56	-67.4	H	3.0	-13.3	38.6	1.0	-50.9	-13.0	-37.9	
7.41	-67.6	H	3.0	-9.9	37.8	1.0	-46.7	-13.0	-33.7	
9.26	-68.4	H	3.0	-8.5	36.6	1.0	-44.1	-13.0	-31.1	
3.70	-64.8	V	3.0	-14.9	38.6	1.0	-52.5	-13.0	-39.5	
5.56	-66.6	V	3.0	-12.8	38.6	1.0	-50.4	-13.0	-37.4	
7.41	-67.5	V	3.0	-10.0	37.8	1.0	-46.8	-13.0	-33.8	
9.26	-69.1	V	3.0	-9.3	36.6	1.0	-44.9	-13.0	-31.9	
Mid Channel (1880MHz)										
3.76	-52.3	H	3.0	-2.2	38.6	1.0	-39.8	-13.0	-26.8	
5.64	-66.8	H	3.0	-12.6	38.5	1.0	-50.1	-13.0	-37.1	
7.52	-67.7	H	3.0	-9.8	37.7	1.0	-46.6	-13.0	-33.6	
9.40	-68.9	H	3.0	-8.8	36.5	1.0	-44.3	-13.0	-31.3	
3.76	-52.4	V	3.0	-2.3	38.6	1.0	-40.0	-13.0	-27.0	
5.64	-66.3	V	3.0	-12.4	38.5	1.0	-49.9	-13.0	-36.9	
7.52	-68.0	V	3.0	-10.4	37.7	1.0	-47.1	-13.0	-34.1	
9.40	-68.9	V	3.0	-8.9	36.5	1.0	-44.4	-13.0	-31.4	
High Channel (1907.6MHz)										
3.82	-54.0	H	3.0	-3.8	38.7	1.0	-41.4	-13.0	-28.4	
5.72	-67.1	H	3.0	-12.7	38.5	1.0	-50.2	-13.0	-37.2	
7.63	-68.2	H	3.0	-10.3	37.7	1.0	-46.9	-13.0	-33.9	
9.54	-68.3	H	3.0	-8.1	36.4	1.0	-43.5	-13.0	-30.5	
3.82	-54.6	V	3.0	-4.3	38.7	1.0	-42.0	-13.0	-29.0	
5.72	-67.5	V	3.0	-13.4	38.5	1.0	-50.9	-13.0	-37.9	
7.63	-67.7	V	3.0	-9.9	37.7	1.0	-46.6	-13.0	-33.6	
9.54	-68.1	V	3.0	-7.9	36.4	1.0	-43.3	-13.0	-30.3	

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WCDMA Band 2 HSDPA

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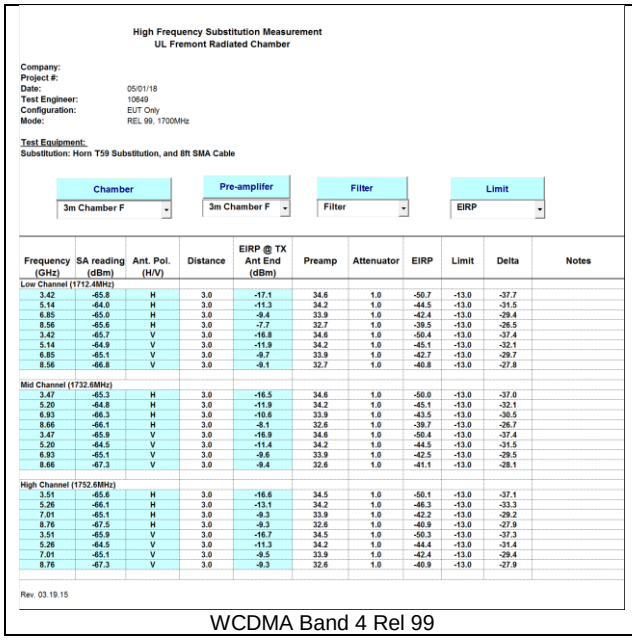

High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 05/01/18
Test Engineer: 10649
Configuration: EUT Only
Mode: REL 99, 1700MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber F	3m Chamber F	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1712.4MHz)										
3.42	-65.8	H	3.0	-17.1	34.6	1.0	-50.7	-13.0	-37.7	
5.14	-64.0	H	3.0	-11.3	34.2	1.0	-44.5	-13.0	-31.5	
6.85	-65.0	H	3.0	-9.4	33.9	1.0	-42.4	-13.0	-29.4	
8.56	-65.6	H	3.0	-7.7	32.7	1.0	-39.5	-13.0	-26.5	
3.42	-65.7	V	3.0	-16.8	34.6	1.0	-50.4	-13.0	-37.4	
5.14	-64.9	V	3.0	-11.9	34.2	1.0	-45.1	-13.0	-32.1	
6.85	-65.1	V	3.0	-9.7	33.9	1.0	-42.7	-13.0	-29.7	
8.56	-66.8	V	3.0	-9.1	32.7	1.0	-40.8	-13.0	-27.8	
Mid Channel (1732.6MHz)										
3.47	-65.3	H	3.0	-16.5	34.6	1.0	-50.0	-13.0	-37.0	
5.20	-64.8	H	3.0	-11.9	34.2	1.0	-45.1	-13.0	-32.1	
6.93	-66.3	H	3.0	-10.6	33.9	1.0	-43.5	-13.0	-30.5	
8.66	-66.1	H	3.0	-9.1	32.6	1.0	-39.7	-13.0	-26.7	
3.47	-65.9	V	3.0	-16.9	34.6	1.0	-50.4	-13.0	-37.4	
5.20	-64.5	V	3.0	-11.4	34.2	1.0	-44.5	-13.0	-31.5	
6.93	-65.1	V	3.0	-9.6	33.9	1.0	-42.5	-13.0	-29.5	
8.66	-67.3	V	3.0	-9.4	32.6	1.0	-41.1	-13.0	-28.1	
High Channel (1752.6MHz)										
3.51	-65.6	H	3.0	-16.6	34.5	1.0	-50.1	-13.0	-37.1	
5.26	-66.1	H	3.0	-13.1	34.2	1.0	-46.3	-13.0	-33.3	
7.01	-65.1	H	3.0	-9.3	33.9	1.0	-42.2	-13.0	-29.2	
8.76	-67.5	H	3.0	-9.3	32.6	1.0	-40.9	-13.0	-27.9	
3.51	-65.9	V	3.0	-16.7	34.5	1.0	-50.3	-13.0	-37.3	
5.26	-64.5	V	3.0	-11.3	34.2	1.0	-44.4	-13.0	-31.4	
7.01	-65.1	V	3.0	-9.5	33.9	1.0	-42.4	-13.0	-29.4	
8.76	-67.3	V	3.0	-9.3	32.6	1.0	-40.9	-13.0	-27.9	

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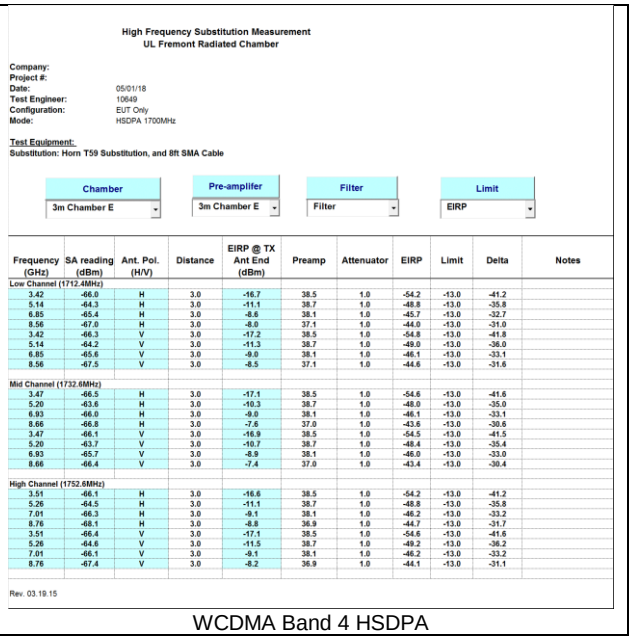
WCDMA Band 4 Rel 99



High Frequency Substitution Measurement
UL Fremont Radiated Chamber

Company:
Project #:
Date: 05/01/18
Test Engineer: 10649
Configuration: EUT Only
Mode: HSDPA 1700MHz

Test Equipment:
Substitution: Horn T59 Substitution, and 8ft SMA Cable

Chamber	Pre-amplifer	Filter	Limit
3m Chamber E	3m Chamber E	Filter	EIRP

Frequency (GHz)	SA reading (dBm)	Ant. Pol. (H/V)	Distance	EIRP @ TX Ant End (dBm)	Preamp	Attenuator	EIRP	Limit	Delta	Notes
Low Channel (1712.4MHz)										
3.42	-66.0	H	3.0	-16.7	38.5	1.0	-54.2	-13.0	-41.2	
5.14	-64.3	H	3.0	-11.1	38.7	1.0	-48.8	-13.0	-35.8	
6.85	-65.4	H	3.0	-8.6	38.1	1.0	-45.7	-13.0	-32.7	
8.56	-67.0	H	3.0	-8.0	37.1	1.0	-44.0	-13.0	-31.0	
3.42	-66.3	V	3.0	-17.2	38.5	1.0	-54.8	-13.0	-41.8	
5.14	-64.2	V	3.0	-11.3	38.7	1.0	-49.0	-13.0	-36.0	
6.85	-65.6	V	3.0	-9.0	38.1	1.0	-46.1	-13.0	-33.1	
8.56	-67.5	V	3.0	-8.5	37.1	1.0	-44.6	-13.0	-31.6	
Mid Channel (1732.6MHz)										
3.47	-66.5	H	3.0	-17.1	38.5	1.0	-54.6	-13.0	-41.6	
5.20	-63.6	H	3.0	-10.3	38.7	1.0	-48.0	-13.0	-35.0	
6.93	-66.0	H	3.0	-9.0	38.1	1.0	-46.1	-13.0	-33.1	
8.66	-66.8	H	3.0	-7.6	37.0	1.0	-43.6	-13.0	-30.6	
3.47	-66.1	V	3.0	-16.9	38.5	1.0	-54.5	-13.0	-41.5	
5.20	-63.7	V	3.0	-10.7	38.7	1.0	-48.4	-13.0	-35.4	
6.93	-65.7	V	3.0	-8.9	38.1	1.0	-46.0	-13.0	-33.0	
8.66	-66.4	V	3.0	-7.4	37.0	1.0	-43.4	-13.0	-30.4	
High Channel (1752.6MHz)										
3.51	-66.1	H	3.0	-16.6	38.5	1.0	-54.2	-13.0	-41.2	
5.26	-64.5	H	3.0	-11.1	38.7	1.0	-48.8	-13.0	-35.8	
7.01	-66.3	H	3.0	-9.1	38.1	1.0	-46.2	-13.0	-33.2	
8.76	-68.1	H	3.0	-8.8	36.9	1.0	-44.7	-13.0	-31.7	
3.51	-66.4	V	3.0	-17.1	38.5	1.0	-54.6	-13.0	-41.6	
5.26	-64.6	V	3.0	-11.5	38.7	1.0	-49.2	-13.0	-36.2	
7.01	-66.1	V	3.0	-9.1	38.1	1.0	-46.2	-13.0	-33.2	
8.76	-67.4	V	3.0	-8.2	36.9	1.0	-44.1	-13.0	-31.1	

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WCDMA Band 4 HSDPA

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10. SETUP PHOTOS

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